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Editorial

THE SENATE VOTE ON THE SHEPPARD-TOWNER CO-OPERATION BILL

In the last Illinois Legislature there was what is known as a bill to provide for co-operation on the part of Illinois with national Sheppard-Towner Maternity Act. The medical and allied professions of Illinois fought this measure energetically and contributed no small share towards its ultimate defeat.

The following is the affirmative and negative vote on the bill in the Senate. The vote of the respective senators is again reproduced for the benefit of the Doctors in each Senatorial district. The data may be found useful at the forthcoming primaries in April.

The following Senators voted in the affirmative:

Bailey, Barbour, Barr, Buck, Dailey, Dunlap, Duvall, Essington, Ettelson, Glackin, Glenn, Haenisch, Hicks, Jewell, Kessinger, MacMurray, Marks, Mason, Roos, Schulze, Searcy, O. W. Smith, Sneed, Swift, Telford, Turnbaugh, VanLent. Yeas—27.

The following voted in the negative: Messrs.

Boyd, Boehm, Carlson, Giberson, Gray, Mills, Piotrowski, Webster. Nays—8.

Answering present but not voting: Messrs. Cuthbertson, Shaw, N. E. Smith, Wright. Total—4.

NOTE:- That Senator Essington is now a candidate for Governor. Senator Dunlap made a speech for the bill; Senator Glenn spoke for the bill and kidded the Doctors throughout his speech; Senator Jewell spoke for the bill, as did also Senator Mason; likewise Senator Swift. Senator Barbour made a speech for the bill and among other things said: "The Doctors think they own me." The readiness with which a Senator can flop from one side to the other of a proposition is shown by the following by Senator Barbour. This letter is in response to a telegram sent Senator Barbour asking him to vote against the Sheppard-Towner Bill. The following is his reply:

"Springfield, Illinois, May 3, 1923.
Mr. Edward C. Lulling,
6350 N. Western Ave.,
Chicago, Illinois.
My Dear Sir:

I appreciae your telegram and beg to inform you that I am against the bill you speak of.

Yours very truly,
James J. Barbour."

Mr. Barbour informed several of the Medical Committee in person that he was against the bill, yet when it came to voting he saw fit to be for it.

Senators Boehm, Giberson, Mills and Webster spoke against the bill. Senator Wright, a doctor, was present but did not vote.

DOCTORS SHOULD TABOO PARTY POLITICS. NOW IS THE TIME TO MAKE YOUR INFLUENCE COUNT.

Following previous primaries and elections members of the House and Senate have offered among other excuses that they did not know that the medical profession were on the map. That had they realized that there is such a thing necessary as public health protection that they would not have pledged themselves thus and so and as a result they voted against the best interest of the public and the medical profession.

Since all members of the House and half the members of the Senate must come before the public at the primaries in April, and will ask the support of their constituents, it will be possible for the doctors on each district to throw their influence in favor of certain candidates. This furnishes an opportunity for the physician to exercise his right of selection of candidates, and he should vote only for such men as can be trusted to vote intelligently in the legislature on matters concerning health measures in this state.

Under present conditions Doctors should be more patriotic than partisan at elections. Self preservation is one of the first laws of nature. Medical men must stand together. The organized profession must have a clear cut platform on things medical and must not hesitate to back it whether it is unpalatable to either of the old parties and their candidates. In the new order of things there is no longer to be considered the party brand. The slogan for the future should be: "Does the candidate stand for radical medical legislation, which is always un-American, destructive alike to the interests of the people and the profession."

The welfare of the profession and the masses of our people is knitted and woven into the fabric of the campaign against bolshevism and destructive foreign propaganda financed and fostered by agents of destruction. The ideals for which we strive are always in the interests of the public and are not impossible of accomplishment, if we will wage a constructive fight against the election of any candidate for the legislature or for other office who are in sympathy with un-American propaganda.

Whether one is a democrat or a republican makes no difference in local government. He can join in the saving of the government without abandoning his political party. What we need now is political leaders who will not show cowardice in evading issues involving the safety of our government because they antagonize aggressive minority organizations. Loyalty to the best interests of all the people must be above and beyond that of any civil or industrial organization working for the interests of special groups or classes.

Elsewhere in this issue will be found the names of the candidates seeking nomination before the primaries in April. Be sure your candidate is right before you vote for him.

PRESIDENT C OOLIDGE IS AGAINST STATE AID, PATERNALISM AND OTHER FORMS OF FREAK LEGISLATION.

On January 21, President Coolidge addressed the members of the Government's business organization. We quote from his speech as follows: "I take this occasion to state that I have given much thought to the question of Federal subsidies to the State Governments. The Federal appropriations for such subsidies cover a wide field. They afford ample precedent for unlimited expansion.

"I say to you, however, that the financial program of the chief executive does not contemplate expansion of these subsidies.

"My policy in this matter is not predicted alone on the drain which these subsidies make on the national treasury. This of itself is suffi-

cient cause for concern. But I am fearful that this broadening of the field of government activities is detrimental both to the Federal Government and to the State Governments.

"Efficiency of Federal operations is impaired as their scope is unduly enlarged. Efficiency of the State Governments is impaired as they relinquish and turn over to the Federal Government responsibilities which are highly theirs."

In speaking of Federal subsidies to State Governments the President said he had given this subject much thought and that his program does not contemplate this sort of expenditure. The drain of the Federal treasury, he declared, was sufficient to cause concern but, more to the point, this broadening of the field of Government activities is detrimental not only to the Federal Government but to the State Governments as well.

"Efficiency of Federal operations is impaired as their scope is unduly enlarged, and efficiency of the State Governments is impaired as they relinquish and turn over to the Federal Government responsibilities which are rightfully theirs."

President Coolidge believes in the essential virtues—self reliance, thrift, loyalty to truth, subordination of expediency to righteousness. He has no sympathy for paternalism or undue dependence on the grandmotherly state. He is a stanch upholder not only of State rights but of local autonomy, of local initiative, of neighborly co-operation. He admires the original plan of town government, a government of the citizens and by the citizens.

Millions of Americans are in revolt against paternalism and state subsidies and other menacing features of present day legislation. It is the wise politician who will take note of this uprising and align himself with the President. It is time that we begin to decentralize government and to curb federal activities as a growing menace detrimental to the Federal Government and to the State Governments, and nowhere is this menace more to be feared than in the care and treatment of the health welfare of the people.

PAY THE BOYS THE BONUS

We have stoutly maintained right along for a reduction in taxes but we consider the soldier bonus a matter of simple justice. They went to war in obedience to the command of the government. Some 320,000 of them were either killed or wounded while several hundred thousand lost their jobs while a number of un-American and unpatriotic citizens stayed at home making enormous wages and profits while the boys were in the trenches. Especially those who sold arms, amunition, war material, clothing, etc., as well as those who had contracts for building ships, barracks, those in the banking business, those who sold liberty bonds for a commission, and those who reaped large profits, also those that after the war bought the left over manufactured products from the government at knock down prices.

These classes of people should be made to pay the bonus to the boys who risked their lives and their health and lost valuable time while the un-American and unpatriotic profiteers were reaping a harvest at home.

Retrenchment to an amount sufficient to meet the bonus act can be readily accumulated by discontinuing the thousands and one uplift schemes now on the statute books sponsored and put on the the statute books by uplifters, social settlement workers, etc., many of whom were under government scrutiny for seditious activities while these fine American boys were fighting to make the world safe for democracy.

YOU WILL PROBABLY DIE BEFORE YOU ARE FIFTY YEARS OLD

Mr. E. E. Rittenhouse of the Equitable Life Assurance Company in his report to the life insurance presidents says

You look smooth, pink and healthy.

You are a good liver. (He said *are*, not *have*.)

You hurry. The medium age at death of the American people is 43.

Your eyes have been strained by inside work: hence the glasses.

You are seriously overstraining heart, arteries, kidneys, nerves and digestion—as the rapidly increasing death rate shows.

You could detect and head off these troubles if you would go to a doctor for an occasional examination.

Under exertion you are short-winded, due to lack of exercise or a bad heart.

Your four hundred muscles are virtually all soft and weak from lack of use.

You are designed as an erect, outdoor animal,

with feet and legs for service; but you lie down all night and sit down all day.

You never walk when you can ride.

The arches of your feet are gradually falling, because the muscles provided to hold them up have weakened from long disuse.

Your ancestors lived on a farm; the proportion of people living in cities has increased 131 per cent in fifty years.

You feed your stomach with all sorts of "tasty junk," much of which cannot be fully digested; so you develop auto-intoxication.

With every pound of fat you gain your chances of a shortened life increase.

You eat 30 per cent more food than your grandfather did; and 374 per cent more sugar.

You spend 367 per cent more for patent medicines and drugs than your father did; and drink 54 per cent more coffee.

In your easy-going optimistic way, you are cheered by the fact that the general death rate is declining. You fool yourself with the notion that this means a green old age for you.

As a matter of fact, the decrease in the death rate is due to the better care of infants.

Not only is the adult death rate not decreasing: it is alarmingly increasing.

Since 1900 the death rate from Bright's disease has increased 15 per cent; from disease of the heart, 27 per cent.

These are the diseases of adult life—the diseases of hurry and worry and overeating and nervous wear and tear.

This picture, remember. It is painted by Mr. Rittenhouse, whose business it is to figure how much you ought to pay for life insurance, in view of the fact that you will probably die before you are fifty years old.

Mr. Rittenhouse says there is hope for you.

His annual medical examination; more exercise outdoors; less food; more dentistry; no booze; more walking and less taxicabs.

Most of all—no hurry and no worry.

HEREDITY ENVIRONMENT AND DISEASE TRANSMISSION

Whether yesterday or today, is tomorrow's governing influence, continues to agitate physicians and economists seeking a rule of thumb for race preservation and improvement. Endless discussions pitting heredity against environment as a potent factor in individual determination find puzzlingly impartial support.

Morrow says "The many definitions of heredity agree in the essential principle that heredity is the capacity of transmitting the characters or qualities of the progenitors to the descendants. According to the accepted theory these characters reside in a small collection of cells,—the germ cells, the specialized function of which is the perpetuation of the species."

According to this accepted theory, acquired characteristics, such as external mutilations and the like, cannot be transmitted to the offspring. Neither can specific diseases be transmitted as the infecting agent is not present in the germ cells. Still, certain specific diseases, notably syphilis, are at times transmitted to the foetus in utero. As this is a case of early infection, it is not heredity in the biological meaning of the term.

"Few people would maintain that the ills acquired by the parents would be devoid of effect upon the wellbeing of children. The germinal plasm is lodged in the parent's body. If the parent dies the plasm dies. If the parent suffers from any deeply penetrant disorders of nutrition, the probabilities are that this germ plasm must similarly suffer," are contentions of Ormerod.

General recognition is accorded as to a statement of fact, that any disease affecting the whole process of metabolism, or of blood formation, or of the nervous system, affects also in some fashion, the germ plasm, — most probably through bio-chemical processes. Further acceptance is made of the premise that, while no one disease is transmitted in this manner there does result such a general enfeeblement, or degeneracy of the offspring, as renders such offspring peculiarly liable to similar disease, when exposed to the exciting cause.

Therefore, heredity plays a virile part towards inciting the individual and predisposition to disorders of metabolism,—such as diabetes, rheumatism, and gout; to constitutional diseases, —such as tuberculosis, and to disorders of the nervous system.

There are also certain defects or degenerations of special tissue that are apparently directly inheritable. Among these are hemophilia; color-blindness; albinism; some deformities of the limbs, and analogous peculiarities

that are rarely of a serious pathological nature. *But in no field is the influence of heredity more important than in that of nervous and mental diseases.* Among Americans, these diseases are becoming practically racial.

"The predisposition to disorders of the nervous system is extremely heritable," writes Graves. "This is said to be due to the fact that the nervous organism is the most complex in the body, and is therefore, most easily thrown out of equilibrium."

And again, Dr. Woods Hutchinson in his book on "Preventable Diseases" makes the statement:

"All our processes of repair, all the reactions of the body against the attack of accident or disease, are hereditary endowments, worked out with infinite pains and labor through tens of thousands of generations. The utmost that we can do with our drugs and remedies is to appeal to, and rouse into action the great healing power of nature . . . an incarnation of our past experiences handed down by heredity."

Another recent medical writer asserts that "Science as well as the Scriptures teaches that 'From thorns men do not gather figs, nor of a bramble bush, gather they grapes.' 'A good tree bringeth not forth corrupt fruit; neither doth a corrupt tree bring forth good fruit. Every tree is known by his own fruit.'

"The conclusion is reached that not only bodily characteristics but also those of the mind are essentially determined by the hereditary endowment received from the parents. This result is of great importance. Practically it shows how little room is left in the development of the individual for the effects of environment even on the intellect or on the mind, in the broadest sense of the word," says Doncaster. "No doubt the direction which intellectual development takes, is, to a considerable extent determined by circumstances, but the *kind of mind* is decided irrevocably before the child is born."

This means that the old saying, "A gentleman is educated three generations before he is born," had more to back it up than legendary tongue tattle! But this meaning is not accepted without dissension.

Seeking further one notes the writing of W. E. Neiberger that "It is true that education and environment have much to do with human development, yet the fact remains that the raw material out of which civilized man is produced is the chief and important thing. . . Heredity furnishes the raw material ready for the process of polishing. The culture and the education are only the polish added to the raw material."

Rare argument this for selectiveness in human mating as well as in animal breeding. The question is, "What sort of raw material takes the polish best?" And is polished material in the human element as deficient in the essentials that make for race betterment, as are the superfine grains lacking in the elements of food suited best to nourish and to sustain life?

Let further quotation be made to the effect that "Undoubtedly it has resulted that the intellectual progress of the human race has been retarded by ghosts of wornout theories, crystallized into proverbs and aphorisms whose veracity has gone for centuries unquestioned; and every real advance has been accompanied by the disintegration of some tyrannous theory and the banishment of some ghost or 'bogy'. And perhaps, too it may be that one of the 'bogeys' that has for too long held unquestioned sovereignty over the mind of man, and severely conditioned his thinking and speculative outlook, is the theory of heredity."

These cited excerpts indicate opposite views cherished by various scientists in regard to the much disputed hypothesis as to the relative importance played in the making of man by heredity and environment.

That natural inheritance is of the greatest force in character building is one contention. Arrayed against this is the claim that environment, or surroundings, is of paramount importance, and far more likely to produce results than any so-called traits of inheritance.

Each side of the argument has weighty claims. It is evident that heredity plays an important role in the future of an individual—physical, mental and moral. That environment both of things and people are of the greatest value in character moulding and directing, is equally true.

Certain men of genius are often referred to as examples of hereditary greatness managing to display itself in spite of unfortunate or untoward circumstances, as a proof of the statement that "Environment is of slight account." On the contrary, "If genius succeed, it becomes known;

but of the genius that succumbs, no evidence can be given."

Writing in the International Quarterly, volume 8, page 147, J. G. Brooks asserts:

"Environment is a permanent factor. It is justly assumed that the possibilities of character are unknown until environment has been made favorable to function. From this point of view, there is no exclusion of inner force or of outer circumstance. Both are vital to the whole which constitutes our problem. . . . It is a settled race experience that hereditary quality is a constant power, and it is also settled that life's surroundings are no less a power."

Hearken also, to the great Darwin: "Moral qualities are advanced, either directly or indirectly, much more through the effects of habit, the reasoning powers, instruction, religion and the like, than through natural selection."

In "The Development of the Child," Oppenheim says, "Civilization is the sum of those contrivances which enable human beings to advance independently of biological heredity. . . . The child is so easily influenced . . . that, unless there is a fixed and constant plan of action which is designed to fashion him in a certain manner, his final condition will be settled by a ragged combination of chance influences."

It has been asserted that incapacity is inherited. "Many children are born 'mentally deficient,' or even 'criminally disposed.' *However 'Stimulating' the environment,* such children can never become normal."

A reply to this assertion comes from F. H. Hayward in his comment, "The scientific study of education is only at its commencement, and yet we know already that the hereditary dullness of many children springs solely from adenoids, illness, or lack of air, food, or sleep. The brain is sound, but it is not given a chance. With facts like these before us, and with innumerable other instances of the attribution to heredity of defects not truly hereditary at all, we must hesitate again and again before depreciating the power of education."

In this hypothesis, as in millions of others, the line of demarcation would seem to allow for a modicum of truth in the midst of any error. Until men shall know the habitat and controlling leverage of the soul, and the keynote to the realm of the supernatural, the contentions of environment and heredity may be said to pivot on an eternal balance. In either case the "benefit of the doubt" may not come amiss.

HEREDITY AND MENTAL DEFECTIVES

The geometrical progression of life and the continuity of species is prone to evidence itself in the laws of heredity. "Like breeds like" is an axiom of fateful poignancy.

Take for example:

Mendel's Law of Inheritance, as extended by Rosanoff to apply to psychopaths, demonstrates that:

1. Both parents psychopathic, all of the offspring will be psychopathic.

2. One parent normal with psychopathic taint from grandparent, and the other parent psychopathic, half the offspring will be psychopathic and the other half normal, but liable to have psychopathic offspring.

3. One parent normal with normal ancestry, and the other parent psychopathic, all of the offspring will be normal, but liable to have psychopathic offspring.

4. Both parents normal but each having psychopathic taint from grandparent, one-fourth the offspring will be normal and one-fourth psychopathic, the others normal but liable to have psychopathic offspring.

5. Both parents normal but one with psychopathic taint from grandparent, all the offspring will be normal, but half of these may have psychopathic offspring.

6. Both parents normal with pure ancestry, all offspring normal, and not liable to have psychopathic offspring.

The examination of the official reports of sixteen reformatories scattered through as many states where investigation of the mental status has been made, show that 65 per cent of these inmates are feeble-minded.

Reports of the prisons in seven states where like investigations have been made show that an average of 54 per cent are mentally defective. Examination of jail inmates in many places throughout the land has shown that mentally defectives form more than 50 per cent of the total jail population, is stated by the National Committee for Mental Hygiene.

The psychopathic laboratory of the municipal court in Chicago in the examination 4460 prosti-

tutes found 80 per cent of them mentally defective. A Massachusetts committee investigating white slave traffic found in 300 prostitutes examined that 87 per cent of them were mentally below the age of eleven. In the Albany courts it was found that 56 per cent of the prostitutes were murderers, and to support this horde of unmittee for mental hygiene, after examination of many poor houses, county farms, and like institutions for the care of paupers, reports that the mentally deficient are more than 30 per cent of all the inmates.

H. M. Pollock, member of the New York State Hospital Commission, states that "one in twenty-five of the population at some period of life becomes insane." The United States census shows that from 1890 to 1920 the number of insane had increased from 118 per 100,000 of population to 220, and that their care and economic loss yearly amounts to more than $200,000,000, and that "mental deficiency, epilepsy, pauperism, and crime cause still greater annual loss to this country."

SOME RESULTS OF HEREDITY

Like generates like. The son inherits the good and evil traits of the parent and of the parents' parents even until many generations. While the instances prove these facts are too numerous to mention, it may be well to quote some of the more striking.

Dr. Havelock Ellis has described a German family, of whom 834 persons were known to have been descended from a physically strong but mentally weak, drunken woman. The very large majority of these persons were prostitutes, drunkards, tramps, paupers and criminals. Some were murderers, and to support this horde of undesirables the German government has been put to an expense of more than $1,250,000.

Most physicians are familiar with the notorious Jukes family, 130 of whom have been convicted of crime.

Up until the year 1891, the cost of this Juke family to the state of New York was $1,308,000. By now, in all probability this cost has reached the sum of more than two millions of dollars.

John Ishmael and his half-breed wife came to Indiana about 1840. He is supposed to have been a descendant from some of the criminals deported to America from England prior to 1770. Gradually others of the same type, and from the same source, came to Indiana and largely intermarried among their kind. The outstanding characteristic of the whole tribe, which is known as Ishmaelites, was feeble-mindedness, licentiousness, thieving, begging, and a wandering life. Two years ago their numbers were estimated to exceed 10,000 scattered through the Middle West, few of them self-supporting, none of them desirable citizens, most of them securing a living by stealing, begging, prostitution, and living in jails, poor houses and prisons, and by public charity, living in any way except by work.

Investigation of the "Nam" family was found in eight generations of descendants to number now over 850, and they are characterized by crime, drunkenness, prostitution, pauperism, and mental deficiency, and have cost the State of New York over $1,400,000.

Heredity fortunately is not all of the degrading type. Of the many splendid examples of the beneficence of transmitting good traits to posterity one is found in the descendants of Jonathan Edwards, not one of whom was ever convicted of crime and most of whom have occupied positions of honor and trust.

For the sake of comparison we append two tables as object lessons:

MAX JUKES
(Born 1720.)
1,200 descendants identified.

300 in the poorhouse.
300 died in childhood.
440 viciously diseased.
400 physical wrecks.
50 notorious prostitutes.
7 murderers.
60 habitual thieves—averaging 12 years in jail.

JONATHAN EDWARDS
(Born 1703.)
1,394 descendants identified.

295 college graduates.
1 Vice-President.
3 United States Senators.
12 college presidents.
65 college professors.
60 physicians.
100 clergymen.
75 army and navy officers.
60 prominent authors.
100 lawyers.
30 judges.
80 public officeholders.

In contrast to these defective families, was the

attempt to improve the human race by selective generation, which was made by the Oneida Community, a religious sect founded on the idea of attaining perfection. In this experiment the young people attempted to bring about human regeneration by scientific generation, and to that end, before marriage, the couples were examined by a committee, two of which were physicians, as to their mental and physical and spiritual fitness to bring forth offspring. Ninety-eight children were born under this plan during the years between 1869 and 1879. None of these were born deaf, dumb, deformed, or idiotic. Up to September, 1921, fifty-two years since the beginning of this experiment, but six deaths had occurred among these children—one from brain tumor, one from scarlet fever, one from aneurism, and three from accident, only 13 per cent of the average death rate in the United States during those years. The parents (eighty in number) of these children showed marked longevity. Eight died between twenty-nine and fifty-five, forty-four died between fifty-five and eighty-nine, and twenty-eight were still living over seventy in 1921, demonstrating the care which the committee exercised in their selection. *In this Oneida experiment there have been no criminals, no prostitutes, no paupers, no drunkards, no insane,* all of these good citizens helping to sustain the state instead of impoverishing it.

Statistics can be extended indefinitely showing the value of selection in upbuilding the human intellect and physique. Statistics without limit could be cited showing that insanity, prostitution in females and association with prostitutes on the part of the male, indiscriminate sexual indulgence by either male or female, criminality, drunkenness, pauperism, shiftlessness, laziness, irresponsibility, addiction to lies, and general untruthfulness, general moral, social and economic instability, moral laxness in either men or women are evidence of subnormal mentality, and that this class of defectives comes largely from the ranks of the mentally abnormal. Unfortunately these defectives are increasing at twice the rate of the general population.

As most preventive medicine has come through the investigation and efforts of the regular medical profession, we must look to our profession for help in this great branch of preventive medicine.

The Panama Canal zone was rid of the pestilence of fever by eradicating at its source the breeding of a special kind of mosquito. The moron so commonly met with in every day life as well as the more pronounced mentally abnormal must be prevented from breeding their kind. It is the duty of the medical profession to urge that the medical schools teach the law of Mendel and imbue their students with the idea that the prevention of mental abnormalities should fill a large place in the efforts of preventive medicine. It is the duty of our profession to educate the public that the mentally abnormal breed their kind, and to arouse interest in securing proper marriage laws, to secure larger provision for hospitals and schools and colonies for this class of people, thereby diminishing crime, imbecility, insanity, and pauperism, making it less necessary to spend as much as at present on hospitals for insane, poor houses, reformatories, and prisons.

INHERITANCE OF BRAINS

Examination of vital statistics of the population in general as to the relation between the age of parents and the intellectual standing of their children discloses that about 32 per cent of all children born are the offspring of fathers who are under 30 years of age, while 22.22 per cent have fathers over 40. When men of mark are studied, a totally different set of figures results. Here is where maturity tells.

Of one hundred British men of science whose pedigrees were investigated by Sir Francis Galton, only 17 were born of fathers under 30, while 28 were born of fathers over 40.

Of 299 British men of genius examined by Havelock Ellis, 18.73 per cent had fathers under 30, and 34.45 per cent had fathers over 40. Casper Redfield, an investigator of Chicago, has made the most comprehensive study of all. He has traced the pedigrees of 571 eminent men in all walks of life and from all parts of the world. Only 11.4 per cent of them were born to fathers less than 30 years of age, while those born to fathers who had passed the fortieth milestone numbered over half the total number, or 52.77 per cent.

Furthermore, Redfield has shown that while only 3.33 per cent of the total number of children born have fathers fifty years of age and

older, 18 per cent of eminent men are the offspring of such elderly fathers. Contrariwise, 9 per cent of all babies are born to fathers 24 years of age and younger, while only 1.63 per cent of eminent men have such youthful progenitors.

Mr. Redfield holds that children of elderly men have by far the best chance for distinction, because they inherit some of the mental energy developed by their parents in the struggle of life, and that the intellectual effort of the parents increases the intellectual power of the child. Since the sum of such effort is much greater in man of mature years than in youngsters, the middle aged and elderly men are the ones whose sons rise to eminence.

The authorities herein cited have brought a world of data to support the theory that the sons of men past middle life achieve greater eminence than those of younger fathers. The difference mentioned is not accidental.

THIS YOUNGSTER SHOULD BE HEARD FROM

If the theory is correct (and it seems to be fortified by statistics) that the children of fathers past 40 achieve greater eminence in the world than the sons of younger fathers then the world should hear something of the youngest son of William H. Upham, former Governor of Wisconsin, who last year had a son born when his father was almost 81 years of age.

PROSTITUTION, MENTAL DEFECTIVENESS, AND THE SPREAD OF DISEASE

Food for thought lies in the findings that ninety per cent of all prostitutes possess subnormal mentality. From a medical standpoint, the term "prostitute," should be used in the broadest sense. This includes the regularly public woman, and also that area charted as clandestine prostitutes, and made up of those immoral women, already married, but indulging in promiscuous relations with a number of men; also those immoral unmarried women, diversely employed and masking their true professions. The list should include also, the fifty-seven varieties of unspeakable degenerates known as sexual perverts.

Without doubt, exact survey of the mentality of prostitutes would discover a 100 per cent return of the mentally defectives, with a mentality rating below that of a normal child of eleven years. Up until the present time this subject has had merely cursory and incomplete investigation.

All prostitutes are diseased. Men who associate with prostitutes will certainly become diseased from these contacts.

In view of the fact that the prostitute, whether public or private, is the chief distributive center for venereal diseases, in a segment of this familiar vicious circle will be found the long sought for annihilation of the social evil.

The case against venereal disease and the carriers of this plague was heavy enough without the additional weight of the knowledge that mental defectiveness and prostitution were apparently coincidental. No fabled "living death" of primitive mythology wreaked worse havoc than does venereal disease.

As a cause of death among civilians living in temperate climates, syphilis is placed "at the top, as an easy first among infections," by no less an authority than the great Dr. Osler in the annual oration before the Medical Society of London. He estimated that syphilis caused 60,000 deaths in Great Britain in 1915 (20,000 still-birth), 15,000 to 20,000 from paresis, or softening of the brain, 10,000 from tabes-locomotor ataxia; and 10,000 deaths from syphilitic cardio-vascular diseases.

Recent weekly reports of the New York Department of Health show that syphilis is almost at the top of the list as a mortality agent.

Gonorrhea has appalling aftermath. "Anyone knows where gonorrhea begins, but only God knows where it will end," said the famous Ricord.

Physical wrecks in every land could rise in agonized testimony to this effect.

Gonorrhea has disabled its thousands but the after-effects of gonorrhea have disabled tens of thousands. An untreated gonorrhea always has its aftermath. This is true even in a large per cent of the so-called "treated cases." Ignorance and lack of co-operation on the part of the patient in a great percentage of so-called "treated cases," unhappily results in such crude and inadequate care as to amount to practically no treatment at all, or worse.

Even with the most intelligent and careful treatment it is not always possible to avoid complications and sequelae.

After effects of gonorrhea are of special frequency in women, although the disease itself is

of much less virulence, as a rule than in men. Two facts, of course, bear relation to each other. For, while gonorrhea is much simpler and more easily cured in the female than in the male, it so frequently runs its course unnoticed and untreated in the female that sequelae are much more common. Added to which, the anatomy of the female pelvis renders it peculiarly susceptible to extensions of the disease process.

Any one of the organs of the female pelvis or abdomen may be the seat of post gonorrheal infection, and frequently is. Metritis, endometritis, cervicitis, salpingitis, pus-tubes, ulceration of the uterus, erosion of the cervix, are any or all probably gonorrheal in origin.

According to Dr. Howard Kelly, Professor of Diseases of Women at Johns Hopkins University, *venereal diseases cost the United States three billion dollars a year.*

Again quoting Dr. Osler before the Medical Society at London, he attributes "thirty to forty per cent of congenital blindness, fifty per cent of sterility among women, and twenty-five per cent of major operations among women to gonorrhea.

At least 75 to 95 per cent of all cases of so-called female complaints and complications are caused by gonorrhea.

Gynecologists and surgeons everywhere bear out the statement that there is no germ known to science as deadly to a woman's generative apparatus as is the gonococcus, the germ of gonorrhea.

The number of women rendered invalid or permanently sterile, and the number of cases of blindness due to the gonococcus represents an appalling national loss.

There are in the United States 12,000 blind babies who have been made so by gonorrhea. The germ of the disease invaded their eyes while the head was passing through the birth canal of their mothers.

This germ was put into the birth canal by the father who had had gonorrhea sometime during his life. He had failed to take the right kind of treatment, or had stopped treatment before he was cured. On many occasions this culpability is the mother's.

In the male this disease is as a rule much more virulent at the outset than it is in the female. For this reason gonorrhea in the male is much less likely to escape attention, and far more likely to receive supervision and treatment. Incidentally gonorrhea when encountered in the male is more difficult of cure than when a female is infected.

Aside from tuberculosis and cancer and the chancres or other evidences of acute syphilitic infection, as a rule genitourinary diseases in men are the result of gonorrhea.

Prostatitis, both acute and chronic, cystitis, chronic posterior urethritis and epididymitis, are the commonest post-gonorrheal diseases in the male—usually, too, with a mixed infection grafted upon the original lesion.

The notable feature of the matter is that while these diseases have their beginning as a gonorrheal infection, in the genitourinary class, ultimately they break through both of these limitations. Pathologically they become mixed infections, often indeed, losing their Neiserian or gonorrheal identity. In its place we have to deal with the deadly streptococcus or one or more of the many germs found in what is known as mixed infections.

The seriousness and difficulties encountered in curing and in preventing the spread of venereal diseases is graphically shown when we analyse the following statistics:

It is claimed that there are in this country 45,000,000 people with an intellect rating below 11 years: that there are 25,000,000 people with an intellect of about 14 years. It is from these classes that prostitutes both male and female are recruited. A large percentage incapable of education can not be made to appreciate the seriousness of the condition. A good portion of this class of mental defectives feel that inasmuch as they themselves are the victims of the disease they owe nothing to society and feel no compunctions about passing it on to their fellow men. Indiscriminate sexual indulgence on the part of men and women; lack of regard for personal cleanliness and prophylaxis, and lack of knowledge and appreciation of the seriousness of the condition itself and its possible consequences, leads to an alarming rate of occurrence of syphilis and gonorrhea. This together with the fact that subsequent to the development of the disease there is a lack of perception and evaluation of its seriousness, together with a disregard of proper treatment, brings as an inevitable result either a focal infection or a systemic condition

which in either case proves a serious menace to the individual, to the community or most often, to both.

A venereal menace little appreciated by the laity is the readiness with which syphilis is transmitted from person to person in the act of kissing.

Prevention and spread of venereal disease is primarily a medical problem. Some physicians feel it beneath their dignity to treat venereal diseases. This attitude is wrong. It is now and has at all times been the duty of the medical profession to help safeguard the health of the people. In no respect is the advice and co-operation of the profession more needed than in preventing the spread of venereal diseases. Because a great proportion of venereal disease victims fail to seek reliable treatment the menace to the public health is a serious problem. In the ferreting out of those in the community capable of spreading infection the doctors in every community have a large degree of responsibility. If any physician feels that his dignity or finer sensibilities will be degraded by contact or that he will suffer possible contamination by handling the victim of venereal disease, that physician should at least direct the poor victim into channels where proper treatment will be given.

Gonorrhea and syphilis are curable diseases if treatment is instituted at the very beginning of the disease and is persisted in. When the outward signs of these diseases have disappeared, treatment should be kept up just the same. Especially is this true of syphilis, for these lesions disappear rapidly under medication. Sufferers from venereal disease coming under the scrutiny of physicians should be impressed with the necessity of tabooing quacks, counter-prescribers and certain friends who always have a prescription handy with a claim that "this has relieved them." Venereal victims should avoid patent medicines and other drugs not prescribed by physicians who are familiar with the treatment of venereal disease. Unless these rules are adhered to cure cannot be expected.

The human family is the only one wherein prostitution is found. It is the only family wherein females are degraded to gratify the lustful desires of male morons.

When either the male or female prostitute is diseased he or she becomes a social avenger, spreading venereal disease broadcast among the males on the part of the woman, and the females on the part of the men.

Aside from actual physical harm resulting from association with prostitutes, it may not be amiss to make casual mention of the timely old aphorism, "A man is known by the company he keeps." Those who associate and co-habit with these pitiful mental defectives are measured by the same yard stick.

"Birds of a feather flock together," is another tried and true maxim. Degeneracy as well as intellect seeks companionship of its own type. But even degeneracy is at times distasteful to itself as is evidenced by the incident related in the ditty about the man and the pig:

"On a cold day in December—
As near as I remember—
I was strolling down the street in all my pride;
My heart began to flutter,
I slipped into the gutter,
And a pig and I soon lay there side by side.
While I stretched out in the gutter,
With my heart all in a flutter,
A lady passing by was heard to say:
'You can tell a man who boozes
By the company he chooses,'—
And that pig got up, and eased himself away!"

The man who goes with a prostitute is no better than that woman. Sex gives him no privileges from a moral standpoint. These male degenerates are frequently repulsive to the very women whom they honor with their patronage. In other words, it is another case of the man, the gutter and the pig.

Society some day will be forced to rid itself of certain males who might aptly be called male prostitutes. Male prostitutes seek only to devour. All females are their prey. Not even the homes of supposedly decent people are safe from these vultures.

The only way to break a vicious circle is to destroy it. Constant vigilance, continual treatment, and ultimate prohibition,—more by individual education, rather than by statute,—would seem to be the practical method of checking mental defectiveness and destructive prostitution by

placing an entering wedge in the restraint and possible control of venereal disease.

SEX INDULGENCE AND HEALTH

Worship of the phallic symbol continues on the part of those moderns who maintain that health and sex indulgence must go hand and hand.

In these days of sex education it is odd indeed to hear made the statement that sexual intercourse is an essential of physical well-being, and that impaired health will result from a lack of sex indulgence. *Nothing can be farther from the truth.* Such holdings are merely propaganda from the moron, or mentally deficient type, uttered to bolster up pleas from this type to ensure an universal system of loose morality.

It is absolutely unnecessary for unmarried men to revel in sexual intercourse to maintain manly vigor. On the contrary, scientists have proven that to this end, *continence is helpful.*

In this connection the editor quotes his friend, and former associate, Dr. William T. Belfield, professor of genitourinary surgery, Rush Medical College, Chicago, Illinois. Excerpts are made from Dr. Belfield's essay, entitled, "The Sexual Necessity."

"That cohabitation is necessary to physical health, and that continence and health are incompatible is the comfortable creed of men addicted to promiscuous sexual indulgence; though such a man flies into a virtuous rage if his unmarried sister or daughter adopts his creed," says Dr. Belfield.

"It is only the other fellow's sister whose philanthropic interest in masculine health should be encouraged.

"Such statement is a transparent masque for the indulgence of the sexual appetite." Proceeding to enumerate the facts which have led physicians as a profession to deny that belief, in a lengthy array of arguments, Dr. Belfield proves his point, concluding with the statement, "For the reasons given it is quite evident that the young man's physical health is just as independent of cohabitation as is his sister's. It is unfortunate that the education of young men in sexual matters has been supplied so little by the honest counsel of honest fathers and physicians, and so largely by the dishonest advertisements of confidence operators masquerading as physicians, whose sole object is pecuniary profit derived from abusing the ignorance of youth. Probably half the young men in the country have been at some time secretly terrified by reading in such advertisements that nocturnal seminal emissions are evidence of grave disease of the sexual organs, which will surely result in insanity. 'loss of manhood,' and the like, unless the frightened youth employs the marvelous skill of the advertiser. Only physicians can appreciate this phase of the harm caused by mere lack of knowledge which could and should be supplied by fathers."

Dr. Belfield's arguments to prove his case are worth lingering over. Pursuing the partial quotation let it be noted:

"The first function of the reproductive organs is the reproduction, *not of the species, but of the boy himself, the rebuilding of the youth into a man.* The boy deprived by castration of these organs, before puberty never attains manhood. He becomes an overgrown child and fails to develop the distinctively masculine traits of body and mind. . . . His energy and vitality fail to attain the masculine standard. He becomes prematurely old. Until maturity is attained, until the regeneration of the individual is complete,—and this is usually after the twentieth year in our race and climate—there is little or no surplus of generative force over the requirements of the individual for the building of a new person,—his offspring. And herein lies the physical injury of precocious sexual indulgence, whether in natural or unnatural ways—the latter especially common among boys in their teens. . . . Only after the regeneration, the rebuilding of the youth into manhood is complete, has he a surplus of generative energy; and only thereafter may he without loss to himself, divert such surplus to the generation of a second person, through sexual union. . . .

"Many young men harbor the erroneous idea that the reproductive organs, like the muscles, are developed through exercise and become weak through disuse. If this were true, the boy, who exercises them regularly from his tenth year onward should have the greatest sexual power, but everyone knows the reverse of this is the truth. . . . Even though the man abstain from cohabitation for years, yet to the natural sexual stimulation, the organs respond with a profuse secretion. It is quite as impossible to lose the sexual power through neglect to exercise it, as to lose

the power to weep through abstinence from weeping.

"That cohabitation is, so far as mere physical health is concerned, *absolutely unnecessary, is easily shown.* The mere fact that the exemplars of physical prowess in all ages, including the Roman gladiators and modern pugilists, have commonly abstained from cohabitation during the long periods of strenuous training for the physical perfection essential to successful combat, is *expert evidence that sexual indulgence is not essential to supreme physical health.* It is notorious that the premature downfall of many professional pugilists of our day is due to excess with women and wine when they are not in training.

"Even in maturity the vital energy which may without loss be diverted from the individual to his offspring is merely the surplus above his own consumption. The amount of this surplus is naturally dependent largely upon the relation between income, or food, and expenditure or work. For illustration view the wild and domesticated duck. The wild duck, is a superb athlete and expends so much energy in maintaining life that his surplus generative force is exhausted by a few days of sexual indulgence each year, and with only one wife. He is a strict monagamist. On the other hand, his overfed domesticated cousin,—an animated garbage pail with only half the brain weight of the wild duck,—and who has abandoned the use of his wings as needless exercise, expends so little energy in maintaining his life of case, that his surplus for reproduction makes him a continuous and shameful polygamist. So the man who works hard and eats little has relatively moderate sexual desires. The man who works little and eats hard is apt to be a polygamist in theory and secret practice.

"But the healthy man has no physical need of cohabitation because his surplus generative material, be it much or little, is discharged automatically in nocturnal seminal emissions. All of the functions essential to life—digestion, respiration, circulation, excretion,— are automatic processes, requiring no supervision by the intellect, and performed just as perfectly on the day of birth as at any subsequent time. While we acquire the ability to retard some of these functions slightly for our own convenience, yet they remain essentially automatic throughout life. . . . The automatic evacuation of the distended urinary bladder occurs frequently during sleep throughout life and especially in childhood. The automatic evacuation of the distended seminal bladder occurs during sleep throughout life. This usually happens two to four times each month. It is analogous with the automatic discharge of surplus energy which occurs every three or four weeks in the female, and is called menstruation. . . .

"Now this 'loss of manhood' so dreadful to youth is caused never by lack of sexual indulgence but often by the abuses and diseases inseparable from promiscuous indulgence. Lifelong impotence and the barrenness of marriage are usually traceable to the venereal diseases."

The famous "Lord Kitchener of Khartoum" stressed the importance of continence among the British soldiers in the Orient. In his letter on this topic, which he insisted that each soldier must place in his "small book,"—the manual of instructions carried by the soldiers for constant reference the famous "K. K." said among other things:

"The common woman as well as the regular prostitutes in India are almost all more or less infected with disease. It is rife in the country and in the villages as well as in the towns. And it is only by avoiding altogether the many facilities for indulgence which India affords that men can be sure of remaining safe from infection. The danger is not merely limited to the venereal diseases—chancre, syphilis and gonorrhea. Numbers of cases have occurred in which soldiers have died of plague and smallpox contracted from native women. Such diseases when contracted by Europeans from natives of Asia or Africa are almost invariably fatal, for diseases passed on from one race of men to another, always increase in severity.

Similarly, syphilis contracted by Europeans from Asiatic women is much more severe than that contracted in England."

This last item is of interest. There is a fad among some perverts for patronizing brothels occupied by women of other races.

HEREDITY AND EUGENICS

Heredity and eugenics is one of the current and pertinent points of social and scientific consideration. Finesse in race selection is recommended for race supremacy.

In a discussion of the results of mating be-

tween superior, inferior and mediocre individuals, Dr. Davenport shows various poignant premises. Among these are statements that:

"With exceptional parents some of the offspring will be exceptional individuals, but also that, whatever the parentage, many individuals will be inferior in respect to many or even all essential characters, and these are known as degenerates.

"Animal breeding has two distinctly different objects, arrived at by almost opposite methods: (1) the promotion of a few exceptional individuals, like race horses and fancy stock generally; (2) the raising of the general average of the breed. In the first case, only exceptional individuals are used for breeding purposes. Some would imitate this procedure with humans, but Davenport holds that we secure the same results in a good degree through preferential mating. It is not true, as a rule, that people choose opposites. On the contrary, tall tends to marry tall, and short, short; musical, musical, and in like sequences.

"To go beyond this natural result of preferential mating, we should be obliged to apply to our marriage laws of the best people, such restrictions as would dangerously interfere with the deepest human instincts, in which attempts we should either fail, or else we should blot out of the race its choicest asset and most valuable character—love. The raising of the average may be attained by breeding from the few or by excluding the lower limits of the race. We can not exclude as widely as the animal breeder does, but we can aim at the absolute exclusion of the degenerate. Davenport sums up by saying that he can not approve the oft-proposed interference with the marriage relations of normal people. Any mistakes they make will be blotted out mechanically and will not permanently weaken the race, or greatly hamper it at any given moment. But he would deal differently with the criminal class and take every opportunity to eliminate them from the possibility of reproducing their kind when they are once adjudged to be degenerates.

A NEW GARMENT

"Eliza," said a friend of the family to the old colored washerwoman, "have you seen Miss Edith's fiance?"

Eliza pondered for a moment, then bent over the laundry tubs once more. "No ma'am," she said, "it ain't been in the wash yet."

ARE WE INVADED BY THE BOLSHEVIKI ASKED GOVERNOR TEMPLETON OF CONNECTICUT?

The Medical Licencing Committee Need Not Be Doctors. Very Likely They Would Have Been Lawyers. Certainly They Would Have Been Politicians

The *Dearborn Independent,* December issue, 1923, contains an article entitled "Clean Up of Fake Doctors in Connecticut." The article is a detailed expose of the fake medical diploma ring in this country. It is the most clear cut expose of the fake medical diploma gang that we have read. Coming from the pen of a layman and published in a lay magazine having a weekly circulation of over 600,000 it is bound to have an immense influence in remoulding public opinion in a way that will help materially in the enactment of more stringent laws for the protection of the public against uneducated and unqualified medical practitioners.

We suggest that our readers procure a copy of the original article. This can be done by addressing the *Dearborn Independent,* Dearborn, Michigan. Price per copy 10 cents.

We quote a few excerpts of the article as follows:

Professor William P. Sachs, the Missouri educator who furnished the fake medical diploma ring with so many spurious high school certificates, believes there are 30,000 bogus doctors scattered over the United States. Discount this materially to allow for a stricken conscience; call the total number half that, as I have in a former article, and the situation is certainly no less appalling.

And a handful of unscrupulous men in St. Louis and Kansas City have made fortunes, hundreds of thousands of dollars, out of it all. Not out of dupes, for the taxi drivers, farmer boys, elevator conductors, clerks in offices or stores and the mass of other unskilled and often illiterate who took the short route to a doctor's degree, who bought these diplomas and paid to have their way to state licenses made easy, were never merely dupes; their eyes were open. Says Dr. Sachs, himself under indictment but intent on everything possible to right the wrong in which he has been a factor, "Soon after I became state examiner for Missouri I went to Chicago to attend a big examination for candidates who desired to enter medical colleges.

"There were six hundred taking this examination—at the Englewood High School in Chicago—and to learn what went on I sat in with the boys and took the examination. I went out to lunch with them and was accepted on such terms that they talked freely to

me. The examination took two days and by the end of the first I had discovered that fully fifty per cent of those answering questions were professional examination takers.

"Imagine my feelings when they told me they had been doing this sort of thing for years, to start on the road to medical practice an army of men too illiterate to pass a high school examination. I feel that at least half the Illinois entrance preliminary certificates are fraudulent, the examinations having been taken by a professional proxy. The certificates may be endorsed, signed and sealed by the proper authorities, but they are crooked, nevertheless.

TRICK PHOTOGRAPHS USED

Most states require a photograph of the applicant for medical license, but this presents no difficulty to the professional examination taker. He furnishes a trick photograph to be affixed to his application, an apparently perfectly good photograph but which has not been properly fixed and will fade out in sixty days or so. In the unlikely event of discovery of this in a state board's files the now-licensed doctor has but to furnish a photograph of himself and there is no way of knowing it different from the first.

When it comes to the bogus diplomas these fellows have sent broadcast over this country—and far outside—the plot really thickens. The diploma ring has put out fraudulent sheepskins bearing the names and seals of a dozen different medical colleges, of which only the St. Louis and Kansas City affairs were active.

Degrees from mythical school were issued without stint; they even went so far as to obtain diplomas of at least four reputable medical schools in different parts of the country—by corrupting individuals presumably. He characterizes Connecticut as the reservoir from which fake doctors could be distributed to other states. He speaks of how the law in Missouri was changed to make it easier for the crooked medical diploma ring to operate and that where before the enactment of the law they were obliged to coach candidates on two hundred and fifty or three hundred questions which included the sixty to eighty licensing boards might ask. That after the enactment of the law they were enabled to establish contracts which enabled them to get examination papers ahead of time and coach only on questions actually to be asked.

"I took forty-two boobs to Connecticut," Voight bragged to Sachs, "and paid five hundred dollars for an advanced copy of the questions and wrote the answers myself for the whole lot."

GOVERNOR'S NATURAL MISTAKE

Incidentally, the last examination of the Connecticut Eclectic Board was held July 11 and 12, 1923. Of the fifty-five candidates five were admitted to practice in Connecticut through reciprocity arrangements with other states, and thirty-one presented Kansas City diplomas. Among the fourteen scattering there may have been other fake diplomas. All but six of Dr. Alexander's thirty-one passed, and these have taken subsequent examinations and passed.

This Connecticut situation could easily have been foreseen. Scarcely a session of its legislature has been without validating acts making regular some doctor who wasn't up to standard. These have often been reported by the Judiciary committee rather than that on Public Health and Safety and their passage made a matter of politics. The chairman of the Joint Committee on Judiciary, lawyers, are always majority leaders of the Senate and House of Representatives.

Had it not been that the state has a governor now who is a straightforward man interested only in his state's welfare, twenty-three more of these "doctors" would have been validated in one lot by the legislature which rose last June.

Both houses passed the bill, reported at the end of the session, and Governor Templeton vetoed it by a pocket veto. The legislative machine could have passed it over his veto, as it had others, but the legislature had adjourned and he had only to refrain from signing it for the measure to die. He couldn't see why men who had failed to pass examinations for license or doubted if they could or had some blot on their records should be legitimatized by act of the legislature.

Can you?

"Are we invaded by the Bolsheviki?" asked Governor Templeton of his executive secretary shortly before adjournment. He had seen in the capitol corridors *foreign-looking men, wearing tall hats but with days' growths of beard and hands and finger nails not over clean. That part of their conversation he had heard was in gutteral and broken English.*

"Don't you know who those are, Governor?"

"No."

"They're the men who are interested in that eclectic validating act," said the executive secretary.

BILL FAILS ON POCKET VETO

At the same time there came out of the same committee a measure reorganizing the Connecticut department of health, a new medical practice act which placed the licensing of doctors in the hands of a commission consisting of five members of the legislature.

They need not be doctors. Very likely they would have been lawyers. Certainly they would have been politicians. In any case, they would not necessarily have had expert knowledge of medicine or medical practice or medical ethics. . .

An advisory board from each of the three schools of medicine, allopathic, homeopathic and eclectic, would pass upon candidates, as now, but with no power to admit or reject them. The licensing would be in the hands of the commission alone. Physicians of highest repute about the state favored this plan—and so did the same men who favored the eclectic validating act. *The Republican leader of the House was an es-*

pecially strong supporter of the new medical practice act. Both houses passed this bill, also.

Yet do you think any five laymen competent to pass on the qualifications of the physician into whose keeping you may later give your life and the lives of your dear ones?

Governor Templeton didn't, and this measure, too, received a pocket veto. An awful howl went up, but he had done something for mankind.

THE PEOPLE OF THE STATE OF ILLINOIS, APPELLEE, v. ROBERT E. SCHAEFFER, APPELLANT.

Mr. JUSTICE DUNCAN delivered the opinion of the court:

The municipal court of Chicago rendered a judgment of $100 in favor of appellee, the People of the State of Illinois, for the use of the Department of Registration and Education, against Robert E. Schaeffer, appellant, in an action of debt in a trial before the court without a jury. The statement of claim charged the violation of the Medical Practice act of 1899, section 9 of which provides: "Any person practising medicine or surgery or treating human ailments in the State without a certificate issued by this board in compliance with the provisions of this act * * * shall, for each and every instance for such practice or violation, forfeit and pay to the People of the State of Illinois, for the use of said board of health, the sum of $100 for the first offense and $200 for each subsequent offense, the same to be recovered in an action of debt," etc.

The two defenses made before the municipal court were, first, that appellant's act, which he conceded to be practicing surgery without a license so to do, is not penalized by the statute; and second, that Medical Practice act of 1890, and particularly sections 2, 3 and 7 thereof, are invalid or unconstitutional,—which latter defense was specifically set up by his affidavit of defense. The appeal is therefore direct to this court.

The facts constituting the violation of the statute, briefly stated, are, that in February or March, 1921, in the city of Chicago, appellant treated Mrs. Blanche Mehlen for a uterine hemorrhage. In the operative work he performed on Mrs. Mehlen he used a vaginal speculum, a vaginal bracing forceps, a currette, and an electric light. He removed a couple of clots of blood out of the cervix inside of the uterus but did not make a complete currettage. He directed the attending nurse to cleanse the external parts and the parturient canal with antiseptics.

As section 9 of the act imposes a penalty upon any person practicing surgery without such certificate the appellant is within the prohibition of the statute, and the judgment must stand unless his second claim that the statute denies to him a constitutional right is maintained.

Section 2 of the act of 1899 is as follows: "No person shall hereafter begin the practice of medicine or any of the branches thereof, or midwifery, in the State without first applying for and obtaining a license from the State Board of Health to do so. Application shall be in writing and shall be accompanied by the examination fees hereinafer specified, and with proof that the applicant is of good moral character. Applications from candidates who desire to practice medicine and surgery in all their branches, shall be accompanied by proof that applicant is a graduate of a medical college or institution in good standing, as may be determined by the board. When the application aforesaid has been inspected by the board and found to comply with the foregoing provisions, the board shall notify the applicant to appear before it for examination, at the time and place mentioned in such notice.

"Examinations may be made in whole or in part in writing by the board, and shall be of a character sufficiently strict to test the qualifications of the candidate as a practitioner. The examination of those who desire to practice medicine and surgery in all their branches shall embrace those general subjects and topics a knowledge of which is commonly and generally required of candidates for the degree of doctor of medicine, by reputable medical colleges in the United States. The examination of those who desire to practice midwifery shall be of such a character as to determine the qualifications of the applicant to practice midwifery. The examination of those who desire to practice any other system of science of treating human ailments who do not use medicines internally or externally and who do not practice operative surgery shall be of a character sufficiently strict to test their qualifications as practitioners.

"All examinations provided for in this act shall be conducted under rules and regulations prescribed by the board, which shall provide for a fair and wholly impartial method of examination: Provided, that graduates of legally chartered medical colleges in Illinois in good standing as may be determined by the board may be granted certificates without examinations."

The material parts of sections 3 and 7 of said act, so far as applicable to this case, are the following:

"Sec. 3. If the applicant successfully passes his examination, or presents a diploma from a legally chartered medical college in Illinois of good standing, the board shall issue to such applicant a license authorizing him to practice medicine, midwifery or other system of treating human ailments, as the case may be: Provided, that those who are authorized to practice other systems cannot use medicine internally or externally or perform surgical operations: Provided further that only those who are authorized to practice medicine and surgery in all their branches shall call or advertise themselves as physicians or doctors: And provided further, that those who are authorized to practice

midwifery shall not use any drug or medicine or attend other than cases of labor."

"Sec. 7. Any person shall be regarded as practicing medicine, within the meaning of this act, who shall treat or profess to treat, operate on or prescribe for any physical ailment or any physical injury to or deformity of another: Provided, that nothing in this section shall be construed to apply to the administration of domestic or family remedies in cases of emergency, or to the laws regulating the practice of dentistry or of pharmacy. And this act shall not apply to surgeons of the United States army, navy or marine hospital service in the discharge of their official duties, or to any person who ministers to or treats the sick or suffering by mental or spiritual means, without the use of any drug or material remedy."

On the second point raised by appellant, his testimony and the testimony of Dr. George A. Still established, without contradiction, the following facts: Appellant entered the American School of Osteopathy, at Kirksville, Missouri, in which Still was professor of surgery and chief surgeon of its hospitals, an January 29, 1911, and completed the four-year course of that institution in January, 1915, and received the degree of Doctor of Osteopathy. His course of studies embraced surgery, which he studied during the last two years of his attendance in said school, and also embraced the subjects of obstetrics and gynecology. The text books on surgery that are used and taught at the school are the same text books that are used and taught at all modern schools that teach the doctrine of healing by the use of drugs and medicines or the modern schools of the allopaths, who ordinarily style themselves "The Regulars," to-wit: The text books of Rose-Carless, Buck and Bryant, Whorton, DaCosta, Foote, Lovett and Young. Surgery is taught and practiced in the same manner at said school as it is taught and practiced in the modern schools of the Regulars and by their graduates, and the course of surgery in the school is as thorough and as complete as it is in such modern schools. This was positively testified to by Dr. Still, who is himself a graduate from Northwestern Medical College of Chicago and who by investigation has ascertained such facts. The evidence specifically said that appellant in his course aforesaid studied and passed courses in anatomy, histology, general and physical chemistry, physiology, bacteriology, organic and physiological chemistry, embryology, demonstrative anatomy, pathology, hygiene, public health, dietetics, toxicology, dissection, regional and applied anatomy, physical diagnosis, neurology, special pathology, general surgery, eye, ear, nose and throat, obstetrics, clinical practice, skin and venereal disease, pediatrics, operative surgery, gynecology, laboratory diagnosis and also osteopathic therapeutics, to-wit, the principles of osteopathy, practice of osteopathy, osteopathic mechanics and osteopathic clinics. This course includes the subjects taught by medical schools in good standing except the therapeutics of those schools and materia medica. Appellant's education and training necessarily embraced the study of various drugs that are used in connection with surgical operations such as disinfectants, antiseptics, narcotics, etc., and other drugs or medicines applied externally. After graduating from the Kirksville school appellant began practice in Minnesota as an osteopath until he went into the army, in June, 1918. He was in the rehabilitation or development department of the army for six months, after which he returned to his practice in Minnesota. He was licensed as an osteopath in Illinois on November 17, 1920, by reciprocity as to the written part and by examination as to the practical. He attended high school in his home town for two years and thereafter entered the Leander Clarke College at Toledo, Ohio, and left there in 1911. He has a degree of Bachelor of Arts as well as of Doctor of Osteopathy and a special diploma for a fellowship in bacteriology from the American School of Osteopathy.

It is not the claim of the People that appellant was not competent to perform the operation that he did perform on Mrs. Mehlen, or that he did not perform it in the same manner and by the same means as it would have been performed by any physician and surgeon licensed to practice medicine and surgery in all their branches under the act aforesaid. There is no complaint of the results obtained by this operation. The simple charge and claim of the People is that he violated the statute by performing the act of surgery without the certificate or license required by the Act. Appellant's claim is that the act of 1899 is void because it discriminates against applicants for license to treat human ailments in this State who are educated and are graduates in osteopathy, and in favor of those who are educated in medicine and surgery in the medical colleges, and that the act is therefore in contravention of the constitution of this State and also of the Federal constitution. Appellant also contends that the Medical Practice act of 1917 was in substance and in fact declared void by the decision of this court in the case of People v. Love, 298 Ill. 304. This position or contention is questioned by the People in this case. In that case the act of 1917 was declared void as to those who practice any system of treating human ailments without the use of drugs, or medicine and without operative surgery. The question now before us is whether or not the act of 1899 is binding on appellant.

Under the definition of practicing medicine, as given in section 7 of the act, an osteopath, or anyone practicing in the various branches of osteopathy, is practicing medicine when he treats or professes to treat, operates on or prescribes for, any physical ailment or any physical injury to or deformity of another, yet he cannot practice surgery in Illinois under the provisions of the act, or be examined for license to do such practice, unless he is a graduate of a medical college or institution in good standing, no matter how great may be his at-

tainments in this branch of the treatment of human ailments or how high the standard of the school in which he received his surgical training. Sections 2 and 3 of the act specifically provide that no applicant can be permitted to take an examination to practice medicine and surgery in all their branches, or be permitted to practice medicine and surgery in all their branches, unless he is a graduate of a medical college in good standing, as may be determined by the board. The second sentence of the second paragraph of section 2 indicates clearly that such candidates or applicants for license must be graduates of a reputable medical college or colleges in the United States that teach the practice of medicine and surgery by the use of drugs and medicines and surgical instruments, which colleges do not, as is well known, teach any other system of healing, particularly the system of healing as taught and practiced by osteopaths and the various branches of that system. It is, perhaps, also true that nine out of every ten of such medical colleges teach and practice the system commonly known as allopathy, whose practitioners style themselves "The Regulars." At any rate, it is made clear by the provisions of sections 2 and 3 that one who is licensed to practice medicine and surgery in Illinois in all their branches under this statute is licensed and authorized to practice medicine, midwifery and surgery in all their branches and in all the systems of treating human ailments, including the system taught by osteopaths, without being required to be a graduate of a school of osteopathy, or even to study the principles or the system of osteopathy. This is made clear also by the first sentences of sections 3 and 7. Under the definition given in section 7 there can be no doubt that the words "medicine and surgery in all their branches," as used in section 2, mean medicine and surgery as taught and practiced by allopaths, homeopaths, eclectics, osteopaths and all other known practitioners treating human ailments, and that one who is licensed to practice medicine and surgery in all their branches is licensed to practice all of said systems. There is no provision in this act whereby a graduate of a college of osteopthy may be licensed to practice osteopathy and surgery, including midwifery, or whereby he may be examined to practice the same, unless he is also a graduate of one of the medical schools aforesaid. He cannot practice osteopathy in Illinois unless he be examined under the provisions of this act, although he may be a graduate of a reputable college in Illinois in good standing that teaches the system of osteopathy. A graduate of a medical college of Illinois in good standing, as determined by the board, may practice medicine and surgery in all its branches without having to take an examination. The act does not even indicate in any manner the subjects upon which an osteopath must be examined to practice osteopathy. His examination for such practice "shall be of a character sufficiently strict to test their qualifications as practitioners," and his entire examination is at the pleasure of the board, while the character of the examination of a student of medicine is sufficiently indicated and specified by the act. The act even assumes that the osteopath does not use medicines of any kind externally and does not study or practice operative surgery. This record shows that osteopaths have, and particularly the appellant has had, training and education in the practice of surgery and obstetrics equal to that of graduates of the medical colleges, and that osteopaths are taught in their schools to administer certain drugs or medicines externally. To make the discrimination against osteopaths and their humiliation complete, section 3 of the act provides that only those who are authorized to practice medicine and surgery in all their branches shall call or advertise themselves as physicians or doctors.

We think there can be no question whatever that this statute discriminates against appellant as an osteopathic physician and in favor of the graduates of the medical schools, as contended by him. It requires him or a graduate of his school, after spending four years in such graduation, to continue his college education for a further time and perhaps four years longer until he has become a graduate of a medical school, before he can even be permitted to be examined for license to practice osteopathy and surgery, while a graduate of a medical college is permitted, without further study, to practice medicine and surgery. In the second place he is required to study the therapeutics of the allopaths or other medical schools which he does not desire to use in his practice before he can practice osteopathy and surgery, while the graduate of a medical school is not required to graduate in osteopathy or to study osteopathic therapeutics, and yet he may be licensed to practice and may practice osteopathy. In the third place, if an osteopath attends a medical college for the purpose of graduation, the probabilities are that he will be required to repeat in the medical college the study of all those subjects, including surgery, midwifery and gynecology, and all the other studies that we have above enumerated as having been passed by him in his own school, before he can begin the practice of surgery. The very great prejudice existing among many physicians of the medical schools against the osteopaths, and of the osteopaths against those of the medical schools, is well known. This statute recognizes both systems as meritorious because it allows both to treat human ailments according to their system, and it discriminates against the osteopaths and seems to place the examinations of osteopaths to practice osteopathy entirely at the will and discretion of a medical board, as no one other than those educated in the medical system are qualified, under the act, to conduct the examinations provided for by it. This statute therefore tends to deprive the osteopaths of their constitutional right to practice surgery, who are, so far as this record shows, just as efficient and

as well prepared by college and hospital training to practice surgery as are the physicians of the medical schools. The act is therefore void as to such physicians so deprived.

We are only concerned with the question whether this act is unconstitutional by reason of unlawful discrimination, as charged. As we have previously said in other cases, we have no leaning for or against either system or either practitioner. It has been demonstrated over and over again that there is merit in both systems, and neither should be unjustly penalized by statutes which permit unlawful discrimination. This statute is in contravention of the fourteenth amendment of the Federal constitution, which provides that no State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States, nor shall any State deprive any person of life, liberty or property without due process of law, nor deny to any person within its jurisdiction the equal protection of the law. It also violates the provisions of our bill of rights that no person shall be deprived of life, liberty or property without due process of law, and that no law impairing the obligation of contracts or making any irrevocable grant of special privileges or immunities shall be passed. In the passage of this statute the legislature evidently overlooked the fact that it discriminates against osteopaths, as already shown. It is a fundamental principle of this government that its people have the right to make constitutions that will guard them against the tyranny of statutes that permit unlawful discrimination, however innocently or inadvertently made, and courts are required to regard their constitutional oaths and declare every such statute void when it conclusively appears that such act is unconstitutional.

Our attention has been called to the fact by the People in this case that said act has been held constitutional in the case of People v. Gordon, 194 Ill. 560, and cases there cited. In those cases no question of discrimination between the various systems of the practice of medicine or of healing was raised and they are not decisive of the issues raised in this case. We place this decision, however, on the distinct ground that the act is clearly shown to be invalid as to those who are denied their constitutional rights and that the issues here involved were not involved or passed on in the cases referred to. We are to be further understood as holding that this act is merely void as to those persons who are denied constitutional rights, and that neither this decision nor the decision in the Love case in any way affects the legality of any license issued under any medical practice act of this State.

For the foregoing reasons the judgment of the municipal court is reversed.

Judgment reversed.

Farmer, C. J., and Thompson, J., dissenting.

CANDIDATES FOR LEGISIATURE

Candidates for legislative nomination from Cook county district follow:

State Senate

SECOND DISTRICT—Republican: George Van Lent, 1611 W. Jackson boulevard; William M. Garrison, 16 North Wood street. Democratic: Jerry F. Leahy, 1419 West Congress street; John F. Cribben, 2720 West Sixteenth street; Harry McGeean, 2024 West Thirteenth street; Abraham Yarmo, 828 South Paulina street; Edward B. O'Shea, 2315 West Thirteenth street; Leo V. Roeder, 2152 Roosevelt road. Socialist: John E. Mahoney, 919 South Western avenue.

THIRD DISTRICT (to fill vacancy)—Republican: Adelbert H. Roberts, 3405 Calumet avenue.

FOURTH DISTRICT—Republican: Robert W. Schulze, 5420 South Artesian avenue; Max Schraeder, 4830 South Hermitage avenue; Joseph Michlaski, 4930 South Hermitage avenue. Democratic: Frank McDermott, 1552 West Garfield boulevard; Thomas Lynch, 5038 South Elizabeth street; John Buerkle, 5352 South Marshfield avenue. Socialist: Richard A. Berger, 5115 South Robey street.

SIXTH DISTRICT—Republican: James J. Barbour, 5 North La Salle street; Dwight J. Anderson, 7033 Sheridan road. Democratic: Joseph A. Weber, 3134 North Robey street. Socialist: Charles Lorch, 2104 Waveland avenue.

State Representatives

Following are the candidates for state representative in the Cook county districts:

FIRST DISTRICT—Republican: Sheadrick B. Turner, 21 East Twenty-eighth street; Charles A. Griffin, 3111 Ellis avenue; William H. Clark, 3243 Ellis avenue; Harris B. Gaines, 3262 Vernon avenue; Charles McKinley Hagen, 213 East Eighteenth street; Jacob Tipper, 3116 Indiana avenue; George H. Fischer, 2531 State street. Democratic: John Griffin, 2020 Indiana avenue. Socialist: James McNulty, 551 East Thirty-first street.

SECOND DISTRICT—Republican: Peter S. Krump, 1700 Washburne avenue; Leo J. Radzwill, 1907 West Thirteenth street. Democratic: Harry C. Van Norman, 129 South Honore street; Frank Ryan, 2139 West Thirteenth street; Harry C. Ginsberg, 1531 West Thirteenth street; Maurice Klein, 1135 South Ashland boulevard; Earle Schapiro, 1758 West Fourteenth street; Abe Salitsky, 1307 South California avenue; Louis Drucker, 8115 South Ashland boulevard; Andrew Insulato, 839 Garibaldi place; Maurice C. Gault, 411 South Marshfield avenue; William J. Riordan, 2105 Grenshaw street; Philip Harry Ginsberg, 722 South Marshfield avenue; Norton M. Lewis, 801 South Ashland avenue. Socialist: Harry N. Aldrich, 309 South Ashland boulevard.

THIRD DISTRICT—Republican: George T. Kersey, 656 Bowen avenue; Gus Kellberg, 462 West Twenty-sixth street; William E. King, 449 East

Forty-first street; Robert B. De Priest, 3815 Vernon avenue; John H. Hyers, 4005 Grand boulevard; Warren B. Douglas, 596 East Thirty-sixth street; William Lloyd Jenkins, 3547 Grand boulevard. Democratic: George Garry Noonan, 3020 Parnell avenue; John P. Wilson, 3144 Lowe avenue.

FOURTH DISTRICT—Republican: Arthur J. Rutshaw, 835 West Fiftieth street; John A. Marston, 822 W. Fifty-fifth street; Elmer N. Holmgren, 5416 South La Salle street; Robert J. Thompson, 510 West Forty-third street; P. J. Looby, 608 West Forty-seventh street; Nathaniel C. Chalmers, 5058 South State street; William C. Zippman, 5242 South Ashland avenue. Democratic: James P. Boyle, 729 West Fifty-fourth place; Thomas J. O'Grady, 835 West Fifty-fourth place; Joseph Palka, 2103 West Fifty-first street; Michael Ruddy, 1716 West Fifty-first street; John C. Kluczynski, 4958 South Hermitage avenue; William J. Barsfield, 508 Root street; John Gobaczyk, 1522 West Fifty-first street. Socialist: Edwin A. Eshelman, 4234 South Mozart street.

FIFTH DISTRICT—Republican: William M. Brinkman, 1029 East Forty-sixth street; Sidney Lyon, 5250 South Michigan avenue; William M. Riley, 4517 Calumet avenue; George C. Adams, 4410 Vincennes avenue. Democratic: Thomas F. Reilly, 7049 St. Lawrence avenue; John F. Healy, 6120 Rhodes avenue; Joseph M. Cusick, 6044 Stony Island avenue. Socialist: Bernard Berlyn, 6044 Prairie avenue.

SIXTH DISTRICT—Republican: Ralph E. Church, 300 Church street, Evanston; John W. Gibson, 1901 Warner avenue; William M. Brown, 2161 Eastwood avenue. Democratic: Charles H. Weber, 2924 Southport avenue; George H. Moloney, 1251 Columbia avenue; August Groja, 2913 North Seeley avenue; Thomas A. Spellman, 1328 Nelson street. Socialist: Emma Draut, 4913 North Robey street.

SEVENTH DISTRICT—Republican: Howard P. Castle, Barrington; Lewis B. Springer, Wilmette; W. Scott Hodges, River Forest; Arthur A. Huebsch, Congress Park. Democratic: John W. McCarthy, Lemont; William C. Connor, Wilmette. Socialist: William E. Smith, Harvey.

NINTH DISTRICT—Republican: David E. Shanahan, 115 S. Dearborn street; William A. D. Allen, 2101 West Nineteenth street. Democratic: Joseph Placek, 2347 South Kedzie avenue; William J. Gormley, 3543 South Hamilton avenue; Max T. Razniewski, 3038 West Twenty-sixth street; Charles A. Rutledge, 3435 South Paulina street; Joseph Dropski, 3400 South Ashland avenue; Edward Weiner, 3305 South Hoyne avenue; Leo J. Szemocki, 3206 Wall street; Joseph M. Donohue, 3712 Parnell avenue; Thomas A. Brankin; 2941 Elios court; Samuel Rinkus, 913 West Thirty-fifth place; John Szmanske, 3609 South Wood street; Adam Danuskska, 3562 South Halsted street; John J. Domagala, 3132 Mosspratt street. Socialist: Frederick G. Wellman, 3252 South Oakley avenue.

ELEVENTH DISTRICT—Republican: David I. Swanson, 6915 South Green street; William H. Cruden, 10204 Wallace street; Walter R. Miller, 9412 Vanderpoel avenue; Elbert E. Elmore, 1256 West Sixty-fourth street; Albert E. Beath, 6817 South Union avenue; David A. Wyatt, 5821 South Grove avenue. Democratic: George A. Fitzgerald, 7225 Perry avenue; John M. Lee, 6920 South Carpenter street; Edward J. Degnan, 6645 South Artesian avenue; Robert Emmet Lynch, 5502 South Halsted street. Socialist: Henry Groenier, 6447 South May street.

THIRTEENTH DISTRICT—Republican: Elmer J. Schnackenberg, 7435 Clyde avenue; Theo. D. Smith, 1431 East Marquette road; J. B. Aring, Jr., 453 West 118th street; C. A. Young, 7531 Coles avenue; Walter R. Starr, 934 East Seventy-fifth street; Kathryn H. Rutherford, 7715 Prairie avenue; Walter Kraft, 9819 Ewing avenue. Democratic: William W. Powers, 3226 East Ninety-second street; Chester W. Kubacki, 10549 Corliss avenue; James J. Laughlin, 7531 Cottage Grove avenue. Socialist: Harry G. Forsberg, 242 West 113th street.

FIFTEENTH DISTRICT—Republican: Thomas Curran, 1847 South Ashland avenue. Democratic: Joseph Ferina, 1800 Fisk street; Matt Franz, 1700 South Halsted street; Stephen F. Muchowski, 1646 West Twenty-first place; Joseph Szymanski, 1751 West Nineteenth street; Frank K. Szarkowski, 1945 West Twenty-second street.

SEVENTEENTH DISTRICT — Republican: William V. Pacelli, 771 DeKoven street; Henry J. Spingola, 750 West Taylor street. Democratic: Jacob W. Epstein, 820 Roosevelt road; Charles Coia, 823 Forquer street; Thomas F. Frole, 1140 Taylor street; Nick Dire, 1225 West Congress street; Alexander Williams, 1428 West Fourteenth place. Socialist: Henry C. Stockbridge, 767 West Van Buren street.

NINETEENTH DISTRICT — Republican: Charles E. Marinier, 114 South St. Louis avenue; Maxwell Landis, 3625 Douglas boulevard; Harry I. Weisbrod, 3339 Douglas boulevard; Edward J. Cerny, 1647 South Austin boulevard. Democratic: Walter Francis Gallas, 2715 South Tripp avenue; John R. McSweeney, 316 South Springfield avenue; John T. Conley, 106 South Crawford avenue; Thomas L. Long, 4508 West Washington boulevard; Louis J. Sup, 1304 South Fifty-eighth avenue, Cicero; Edgar H. Smullen, 2417 West Congress street; Rudolph J. Horky, 5139 West Twenty-fourth street, Cicero. Socialist: Morris Seskind, 1619 South Central Park avenue.

TWENTY-FIRST DISTRICT — Republican: William F. Daley, 3629 West Huron street; Frederick J. Bippus, 4908 West Huron street; Harold M. Beach, 4806 Park avenue; Joseph A. Percaro, 648 North Talman avenue; Robert M. De Salvia, 624

North Christiania avenue; Andrew C. Knudson, 519 West Morgan street. Democratic: Benjamin M. Mitchell, 110 South Dearborn street; Michael F. Maher, 2233 West Superior street; Peter Wojciechowski, 1438 Fry street; John Duda, 1247 Fry street. Socialist: H. W. Harris, 3618 Franklin boulevard.

TWENTY-THIRD DISTRICT — Republican: Willian G. Thon, 2210 Cortez street; Edward M. Overland, 3228 Hirsch street; Fred J. Steuber, 944 North Drake avenue; J. Walter Lindholm, 928 North Massasoit avenue; Henry A. Kopp, 1505 North Mayfield avenue; Charles A. Mugler, 3210 Cortez street. Democratic: Fred W. Hrdlicka, 2440 Iowa street; Matt Tychsen, 1417 North Austin boulevard; Hyman A. Pierce, 1451 North Fairfield avenue; Arthur B. Tronsen, 1713 Julian street; Frank DeLaby, 1030 North Marshfield avenue; Fred R. Stelnicki, 1016 North Hoyne avenue; James Reardon, Jr., 848 North Waller avenue; Andrew C. Bisek, 2201 Cortez street. Socialist: Leon J. Ell, 924 North Hoyne avenue.

TWENTY-FIFTH DISTRICT — Republican: Theodore R. Steinert, 2112 Powell avenue; John Paul, 4044 North Kimball avenue; Charles L. Fieldstack, 4016 North Harding avenue; William A. Schlupp, 1615 Meade avenue; Feliks Wenatowicz, 3627 North Kedvale avenue. Democratic: John G. Jacobson, 2901 North Rockwell street; Robert A. Rolfe, 2440 North Harding avenue; Roland A. Blaylock, 6158 Bryon street. Socialist: Bernard Kortas, 4226 North Central Park avenue.

TWENTY-SEVENTH DISTRICT—Republican: Albert Rostenkowski, 1237 Noble street; Thaddeus Kotlowski, 662 Fay street; Larry Busalachi, 824 West Austin street. Democratic: William Lipke, 2114 North Lincoln street; A. L. Auth, 1100 West Van Buren street; Adam Kywicki, 947 West Huron street; Ignatz Stankiewicz, 1024 Noble street; Stanley J. Mistelski, 1182 Milwaukee avenue; Frank P. Suchomski, 1257 Noble street; Anton J. Kortas, 1441 West Blackhawk street. Socialist: Henry Finkelstein, 1544 Tell place.

TWENTY-NINTH DISTRICT — Republican: Michael H. Durso, 1012 Milton avenue; Ernest W. Turner, 819 North Wells street; Charles F. Blaine, 6 North Illinois street. Democratic: Lawrence C. O'Brien, 1216 North Dearborn street; Louis Torre, 537 North Franklin street; Anthony Baynes, 876 North Franklin street. Socialist: Florence Hall, 63 West Ontario street.

THIRTY-FIRST DISTRICT—Republican: Carl Mueller, 2142 Lincoln Park west; George A. Willis-ton, 1245 Early avenue; George L. MacFarlane, 2122 Larrabee street; Roy Juul, 6304 Magnolia avenue; Charles J. Peek, 2256 Lincoln avenue; Sigismund Fischer, 317 Star street; John Alger, 1519 North Dearborn parkway. Democratic: James J. O'Toole, 1707 Crilly court; Frank J. Bell, 6330 Lakewood avenue; Pierce L. Shannon, 927 Buena avenue. Socialist: Gustav Johnson, 1508 Hudson avenue.

SECTION No. 2

These are the candidates for state senator in the districts outside of Cook county:

State Senator

EIGHTH DISTRICT—Republican: Charles M. Eldredge, Richmond; Rodney B. Swift, Lake Forset; Leslie N. George, Waukegan. Democratic: Charles J. Wightman, Grays Lake; Myron A. Cole, Belvidere.

TENTH DISTRICT—Republican: H. S. Hicks, Rockford; Charles W. Baker, Monroe Center.

TWELFTH DISTRICT—Republican: John D. Turnbaugh, Mount Carroll; Joseph L. Meyers, Sciota Mills. Socialist: August Walter Hattendorf, Freeport.

FOURTEENTH DISTRICT—Republican: Harold C. Kessinger, Aurora. Democratic: John A. Logan, Elgin. Socialist.

SIXTEENTH DISTRICT—Republican: Simon N. Lantz, Congerville; John E. Shackelton, Cornell. Democratic: Christian Haase, Dashburn; Henry A. Foster, Fairbury; Willis H. Shaw, Odell.

EIGHTEENTH DISTRICT—Republican: John Dailey, Peoria; Harry L. Donaldson, Peoria; T. Edward Burroughs, Peoria. Democratic: William V. Tefft, Peoria; John E. Dempsey, Peoria.

TWENTIETH DISTRICT—Republican: Richard H. Meents, Ashkum; L. S. Holderman, Morris.

TWENTY-SECOND DISTRICT—Republican: Martin B. Bailey, Danville; Henry B. Downs, Danville. Democratic: Kyle E. Rowend, Fairmount.

TWENTY-FOURTH DISTRICT—Republican: Henry M. Dunlap, Savoy; George N. Davis, Champaign. Democratic: Charles J. Mullikin, Champaign.

TWENTY-SIXTH DISTRICT — Republican: Frank O. Hanson, Bloomington; Florence Fifer Bohrer, Bloomington. Democratic: George E. Dooley, LeRoy.

TWENTY-EIGHTH DISTRICT—Republican: Jesse L. Deck, Decatur; T. C. Buxton, Decatur; John Bedinger, Clinton; Robert G. Williams, Decatur. Democratic: Cyrus J. Tucker, Decatur. Socialist, William R. Sinclair, Decatur.

THIRTIETH DISTRICT—Republican: Frank J. Wilkins, Pekin. Democratic: Ben L. Smith, Pekin; Walter I. Manny, Mount Sterling.

THIRTY-SECOND DISTRICT — Republican: John S. Brown, Monmouth; Isaac N. Willis, Monmouth. Democratic, Arthur Taylor, Roseville.

THIRTY-FOURTH DISTRICT — Republican: John R. Hamilton, Mattoon; Charles A. Shuey, Charleston; Freeman Johnson, Charleston. Democratic: Robert Howard, Mattoon.

THIRTY-SIXTH DISTRICT — Republican: William S. Gray, Coatsburg; Roy D. Johnson, Quincy; C. N. Anderson, Quincy. Democratic: Charles R. McNay, Ursa; Henry Bowers, Pittsfield.

THIRTY-EIGHTH DISTRICT — Republican: Andrew S. Cuthbertson, Bunker Hill. Democratic: J. B. Vaughn, Carlinville. Socialist: Thomas C. Roberts, Staunton. Farmer-Labor: John Luscher, Mt. Olive.

FORTIETH DISTRICT—Republican: James H. Forrester, Taylorville; U. G. Ward, Shelbyville. Democratic: A. L. Yantis, Shelbyville.

FORTY-SECOND DISTRICT — Republican: Erastus D. Telford, Salem; G. N. Bruce Welch, Carlyle; Herman R. Scherbarth, Effingham. Democratic: George I. Danks, Edgewood. Socialist: Joseph Globig, Beckemyer. Farmer-Labor: H. W. Olinger, Odin.

FORTY-FOURTH DISTRICT — Republican: Thomas B. F. Smith, Carbondale; Harry Wilson, Pinckneyville.

FORTY-SIXTH DISTRICT — Republican: Charles L. Wood, Keenes. Democratic: H. H. Burgess, Fairfield. Socialist: Charles Honey, Newton.

FORTY-EIGHTH DISTRICT—Republican: Nathan E. Smith, Albion; Mrs. May Gaddis Seiler, R. F. D. No. 5, Mt. Carmel. Democratic: Lyman W. Emmons, Lawrenceville; Porter Kinney, Crossville. Socialist: William H. Spaulding, Lawrenceville.

FIFTIETH DISTRICT—Republican: Wm. J. Sneed, Herrin; C. S. Miller, Mound City; William H. Penrod, Seigler. Democratic: Robert E. Jacoby, Johnston City.

SECTION No. 3

NOTE: These are candidates for representative in the districts outside of Cook county:

Representatives

EIGHTH DISTRICT—Republican: William F. Weiss, Waukegan; Charles H. Francis, Woodstock; F. W. Ackerman, Crystal Lake; N. L. Jackson, Belvidere; James Monroe Gunthorp, Barrington. Democratic: Thomas E. Graham, Ingleside; Charles F. Hayes, Harvard; John L. McCabe, Harvard. Socialist: Murray J. Hammond, Belvidere.

TENTH DISTRICT—Republican: David Hunter, Jr., Rockford; James Nichols, Polo; Emmet F. Wilson, Rockford; Leroy N. Green, Rockford. Democratic: Tirrie O. Prather, Plainfield. Socialist: Laura Butterfield, Chana.

TWELFTH DISTRICT—Republican: Al N. Stephan, Freeport; John Acker, Savanna; Alfred S. Babb, Shannon; Robert Irwin, Mt. Carroll. Democratic: Charles D. Franz, Freeport; W. G. Milner, Freeport. Socialist: Shepard Henry Zimmerman, Freeport.

FOURTEENTH DISTRICT — Republican: Frank A. McCarthy, Elgin; John M. Peffers, Aurora; Ralph H. Hoar, Elgin; John P. Hart, Aurora. Democratic: David M. Flynn, Geneva. Socialist: Mary G. Snover, Aurora.

SIXTEENTH DISTRICT—Republican: Charles E. Turner, Wenona; Calistus A. Bruer, Pontiac; H. A. Miller, R. F. D. 1, Streator; J. F. Schureman, Lacon. Democratic: Michael Fahy, Toluca; D. J. Foley, Cornell; Frank A. Barr, Lacon.

EIGHTEENTH DISTRICT—Republican: Robert Scholes, Peoria Heights; Max R. Broderic, Peoria; Sherman W. Eckley, Peoria; Edwin S. Carr, Peoria; Charles W. LaPorte, Peoria. Democratic: David H. McClugage, Peoria.

TWENTIETH DISTRICT—Republican: C. B. Sawyer, Kankakee; John Trotter, Coal City; R. F. Karr, Iroquois; Roy A. Buckner, Gilman. Democratic: Ernest F. Radeke, Kankakee; J. W. Rausch, Morris; Claude N. Saum, Watseka.

TWENTY-SECOND DISTRICT — Republican: Abraham L. Stanfield, Paris; Hugh N. Luckey, Potomac; Colfax T. Martin, Danville. Democratic: Edgar B. Brown, Paris; Oliver D. Mann, Danville.

TWENTY-FOURTH DISTRICT—Republican: Roger F. Little, Champaign; James A. Reeves, Champaign; William H. H. Miller, Champaign; Alexander Bercher, Atwood. Democratic: Fred H. Cole, Bement; Thompson J. Anderson, Monticello; Thomas J. Kastel, Monticello. Socialist: William Bryan, Champaign.

TWENTY-SIXTH DISTRICT—Republican: G. J. Johnson, Paxton; A. L. Hutson, Colfax. Democratic: E. E. Donnelly, Bloomington; Jacob Martens, Anchor; John P. Russell, Paxton.

TWENTY-EIGHTH DISTRICT — Republican: W. C. Chynoweth, Macon; Henry Menzel, Lincoln; John Clark, Decatur; J. W. Persons, Clinton; Fred W. Reinders, Mt. Pulaski. Democratic: A. A. Hill, Decatur; J. Wilbur Shaw, Decatur; Grover C. Hoff, Clinton. Socialist: Katherine Claus, Lincoln.

THIRTIETH DISTRICT—Republican: Homer J. Tice, Greenview; William G. Burnsmeier, Mason City. Democratic: Martin B. Lohmann, Pekin; Fred L. Warrington, Rushville; H. V. Teel, Rushville; W. E. Wilkins, Athens.

THIRTY-SECOND DISTRICT — Republican: Rollo R. Robbins, Augusta; James H. Foster, Macomb; Faye L. Houtchens, Blandinsville; Michael E. Robinson, Bethel Tp. Democratic: William Adcock, R. F. D., Galesburg; Louis A. Null, Macomb; Franklin M. Hartzell, Carthage. Socialist.

THIRTY-THIRD DISTRICT—Republican: Frank E. Abbey, Biggsville; Harry N. McCaskrin, Rock Island; H. N. Wettler, Rock Island; William E. Whiteside, Moline. Democratic: William C. Maucker, Rock Island; Thomas P. Sinnett, Rock Island.

THIRTY-FOURTH DISTRICT — Republican: Harry Baxter, Newman; Walter E. Cork, Marshall; Clinton S. Hall, Oakland; Wm. B. Berkley, Casey. Democratic: Norman Bennett, Marshall; Joel T. Davis, Tuscola; Patrick Kane, Charleston; Troyt B. York, Casey.

THIRTY-FIFTH DISTRICT—Republican: John H. Byers, Dixon; Henry C. Allen, Lyndon;

A. G. Harris, Dixon. Democratic: John P. Devine, Dixon.

THIRTY-SIXTH DISTRICT—Republican: A. Otis Arnold, Quincy; A. L. Kiser, Pittsfield. Democratic: Samuel S. Hyatt, Quincy; Mary C. McAdams, Quincy; John R. Abbott, Quincy; J. H. Paxton, Golden; Carroll Bush, Pittsfield; R. B. Siepker, Barry; Joseph H. Hanly, Quincy.

THIRTY-SEVENTH DISTRICT—Republican: Frederick W. Rennick, Buda; John Robert Moore, Kewanee; William H. Jackson, Toulon; William R. Teece, Wyanet; Milton T. Booth, Atkinson. Democratic: Frank W. Morrasy, Sheffield.

THIRTY-EIGHTH DISTRICT — Republican: Otto C. Sonnemann, Carlinville; Alvin P. Gillick, Hettick; Robert Whiteley, Carlinville; Chester C. Weber, Litchfield; David Davis, Litchfield; Harry F. Bycroft, Gillespie. Democratic: H. A. Shephard, Jerseyville; Truman A. Snell, Carlinville. Socialist: Benjamin Squires, Carlinville. Farmer-Labor: Fred Heldt, Carlinville.

THIRTY-NINTH DISTRICT—Republican: R. G. Soderstrom, Streator; O. E. Benson, Ottawa; John Wylie, Ottawa; N. M. Mason, Ogelsby. Democratic: Lee O'Neil Browne, Ottawa; Chase Fowler, Ottawa. Socialist: Thomas Johnson, Streator.

FORTIETH DISTRICT—Republican: Lincoln Bancroft, Greenup; H. D. Sparks, Shelbyville. Democratic: Arthur Roe, Vandalia; John C. Richardson, Edinburg; Thomas W. Ashbrook, Taylorville.

FIRTY-FIRST DISTRICT—Republican: John L. Walker, Joliet; Lottie Holman O'Neill, Downers Grove; William R. McCabe, Lockport; Frank S. Lambert, Plainfield. Democratic: Michael F. Hennebry, Wilmington; William C. Mooney, Joliet. Socialist: Robert D. Parker, Downers Grove.

FORTY-SECOND DISTRICT — Republican: Charles L. McMackin, Salem; R. J. Branson, Centralia. Democratic: A. B. Lager, Carlyle; J. E. McMackin, Salem; Silas L. Davidson, Salem. Socialist: Frederick A. Cawley, Centralia. Farmer-Labor: E. C. Strang, Sandoval.

FORTY-THIRD DISTRICT—Republican: Owen B. West, Yates City; Reed F. Cutler, Lewistown; Mary O. C. Mackin, Galesburg. Democratic: M. P. Rice, Lewistown; Frank O. Pittman, Cuba. Socialist: Carl M. Sweet, Canton.

FORTY-FOURTH DISTRICT — Republican: Henry Eisenbart, Waterloo; Elbert Waller, Tamaroe; R. E. Atkins, Elkville; Robt. S. Stevenson, Tilden. Democratic: Chas. J. Kribs, Prairie DuRocher; Harry Martin, Sparta.

FORTY-FIFTH DISTRICT—Republican: Euclid B. Rogers, Springfield; Samuel E. Moore, Williamsville; Luther O. German, Springfield; A. M. Williams, Springfield. Democratic: B. L. Barber, Springfield; Homer D. McLaren, Springfield; Marion U. Woodruff, Springfield; J. I. Simpson, Springfield. Socialist: John Frank Danis, Divernon.

FORTY-SIXTH DISTRICT — Republican: W. B. Phillips, Mt. Vernon; Guy Redman, Olney; George W. McColley, Newton. Democratic: Laurence F. Arnold, Newton; Theodore P. Stelle, Mt. Vernon; H. W. Faulkner, Mt. Vernon; Joseph H. Payne, Mt. Vernon. Socialist: Samuel Tibbits Hinckley, Mt. Vernon.

FORTY-SEVENTH DISTRICT — Republican: Norman G. Flagg, Moro; Chris Rethmeier, Edwardsville; Clara Halbert Needles, Granite City; Earl Herrin, Edwardsville. Democratic: Robert W. Tunnell, Edwardsville; Wm. Dickman, Edwardsville; Stephen G. B. Crawford, Alton; Charles F. Malloy, Scrento; John Kreider, Collinsville.

FORTY-EIGHTH DISTRICT—Republican: Ed. Ryan, Lawrenceville; Daniel E. Rose, Maunie. Democratic: F. W. Lewis, Robinson; Jerome L. Harrell, Norris City. Socialist: Wilbur Hudspeth, Lawrenceville.

FORTY-NINTH DISTRICT — Republican: Ed. P. Petri, Belleville; Waldo B. Isom, East St. Louis; John T. Wood, East St. Louis; Roy R. Heidinger, East St. Louis; George Keller, Belleville; Thomas L. Fekete, Jr., East St. Louis; Charley Marshall, East St. Louis. Democratic: Frank Holton, East St. Louis; W. A. Murphy, East St. Louis; Grover C. Borders, East St. Louis; John F. O'Flaherty, East St. Louis.

FIFTIETH DISTRICT—Republican: Carl Choisser, Benton; Wallace A. Bandy, Marion; Charles S. Britton, Cairo; Andrew W. Springs, Dewmaine; Delbert B. Cobb, West Frankfort; Harry W. Bradbury, Marion; William E. Lilly, Cairo. Democratic: Thomas J. Myers, Benton; P. M. Proctor, Christopher; Samuel J. Tilden Dillow, Dongola.

FIFTY-FIRST DISTRICT—Republican: D. D. Lockwood, Harrisburg; W. V. Rush, Metropolis; Claude L. Rew, Harrisburg; Roy Summers, Broughton; Charles V. Warren, Broughton. Democratic: John McElvain, Broughton; W. A. Grant, Harrisburg; Ellen O. Johnson, Galatia.

For Trustees of the First Side Levee and Sanitary District

Republican: John D. Johns, East St. Louis; Emil W. Hohlt, East St. Louis; Martin D. Baker, East St. Louis; William H. Alston, East St. Louis; Robert D. Schmidt, Granite City; Lee R. Newgent, East St. Iouis; Harry Carpenter, East St. Louis; John W. Costley, Granite City; Griff G. Hodge, Granite Sity. Democratic: Stephen H. Kerman, East St. Louis; Emil Dingersen, East St. Louis; Earl W. Jimerson, East St. Louis; Thomas J. Healy, East St. Louis; Wm. P. Anson, Granite City; Louis Beasley, East St. Louis; George Lotz, East St. Louis.

SECTION NO. 4

CANDIDATES FOR CONGRESS

The following candidates have filed for congressional nominations in the Chicago districts:

FIRST DISTRICT — Republican: Martin B. Madden, Nathan S. Taylor. Democratic: James F. Doyle, Thor J. Benson, Richard Parker. Socialist: Elinor Whitmore.

SECOND DISTRICT—Republican: Morton D. Hull, Joseph Krooth. Democratic: Frank A. Wright, Joseph Frank, John J. Simpson. Socialist: William Frank.

THIRD DISTRICT—Republican: Elliott W. Sproul, Frank P. Sadler, Robert W. Daniels. Democratic: Joseph F. Timmis, John S. Hickey, George Costello, F. H. Monroe, Frank McGlinn. Socialist: Kellam Foster.

FOURTH DISTRICT—Republican: Stanley Jankowski, Frank Bohnak, Henry G. Dobler, John Golombiewski, Edward Joyce, Thomas A. Shine. Democratic: Thomas A. Doyle, Joseph Mlaka, William Satala, Walter Withoroski. Socialist: John Krause.

FIFTH DISTRICT — Republican: Charles Heehler, Bernard A. Weaver. Democratic: Adolph J. Sabath, Frank J. Vavricek. Socialist: Leon Hanock.

SIXTH DISTRICT—Republican: John J. Gorman, Helmer C. Patterson. Democratic: James R. Buckley, Daniel F. O'Brien. Socialist: Edward Hangsen.

SEVENTH DISTRICT — Republican: M. A. Michaelson, Daniel Webster, Edward A. Russell. Democratic: Hynek H. Howell, John S. Madigan. Socialist: John M. Collins.

EIGHTH DISTRICT—Republican: Ernest D. Potts, Joseph S. Kobrzynaski, Theodore S. Smith. Democratic: Stanley Henry Kunz, Theodore J. Maszola, August Simon. Socialist: William L. Long.

NINTH DISTRICT—Republican: Fred A. Britten. Democratic: Urban A. Lavery, Raymond T. O'Keefe, A. J. Huffoletto. Socialist: Evar Anderson.

TENTH DISTRICT—Republican: Carl B. Chindblom. Democratic: John P. Reed, A. A. Pantelis. Socialist: Mrs. Kunia Sissman.

ELEVENTH DISTRICT—Republican: Frank R. Reid, Aurora; D. H. Anderson, Joliet; Edwin F. Deicks, Lombard; Paul B. Fischer, Wheaton; John P. Hart, Aurora. Democratic: Hugh J. Gilmore, Glen Ellyn; Charles L. Schwartz, Naperville. Socialist: George Chent, Elmhurst.

TWELFTH DISTRICT — Republican: Charles E. Fuller, Belvidere. Socialist: Fred N. Hale, Belvidere.

THIRTEENTH DISTRICT—Republican: William E. Murray, Rock Falls; Reuben R. Tiffany, Freeport; William R. Johnson, Freeport; Solon W. Crowell, Oregon; Myron C. Rogers, Fulton. Democratic: William G. Curtiss, Stockton. Socialist: Xavier Cohant, Dixon.

FOURTEENTH DISTRICT—Republican: William J. Graham, Aledo; Louis K. Cleaveland, Moline. Democratic: Willard A. Schaeffer, Rock Island; Everett L. Werts, Oquawka.

FIFTEENTH DISTRICT—Republican: Edward J. King, Galesburg. Democratic: John B. Cleveland, Kewanee; Henry E. Schmiedeskamp, Quincy. Socialist: John C. Sjodin, Galesburg.

SIXTEENTH DISTRICT—Republican: William N. Hull, Peoria. Democratic: Charles C. Hatcher, Pekin. Socialist: James Lofthouse, Peoria.

SEVENTEENTH DISTRICT—Republican: Frank H. Funk, Bloomington. Democratic: Frank Gillespie, Bloomington. Socialist: Harry A. Crawford, Lincoln.

EIGHTEENTH DISTRICT—Republican: William P. Holaday, Georgetown; John H. Lewman, Danville; Charles W. Raymond, Watseka. Democratic: Andrew B. Dennis, Danville. Socialist: James P. Miller, Ridgeville.

NINETEENTH DISTRICT — Republican: Charles Adkins, Decatur; G. William Byers, Mattoon; Charles E. Moore, Hindsboro. Democratic: George Fulk, Bethany; Raymond D. Mecker, Sullivan; Edward F. Poorman, Mattoon. Socialist: John R. Hefmer, Monticello.

TWENTIETH DISTRICT — Republican: Guy L. Shaw, Beardstown. Democratic: Henry T. Bainey, Carrollton.

TWENTY-FIRST DISTRICT—Republican: Loren E. Wheeler, Springfield; William W. Henry, Virden. Democratic: J. Earl Major, Hillsboro; W. H. Nelms, Springfield; J. Major, Springfield. Socialist: Max P. Heinz, Staunton. Farmer-Labor: Jas. L. McDonald, Girard.

TWENTY-SECOND DISTRICT — Republican: Dr. Ed. M. Irwin, Belleville; R. Guy Kneedler, Collinsville. Democratic: Edward E. Campbell, Alton; Harry E. Jackson, Waterloo; Earl G. Galloway, Stallings. Socialist: Roy F. Boyd, Madison.

TWENTY-THIRD DISTRICT — Republican: Charles J. Metzger, Shobonier; Dale O. Kilburn, Olney; Marion Boles, Mt. Vernon. Democratic: William W. Arnold, Robinson. Socialist: Howard Lee Bollinger, Salem. Farmer-Labor: Fred Horner, Sandovel.

TWENTY-FOURTH DISTRICT—Republican: Thomas S. Williams, Louisville; K. C. Ronalds, Eldorado; W. F. Hamilton, McLeansboro; McPherson Shepard, Grayville. Democratic: J. V. Dillman, Louisville; H. Robert Fowler, Harrisburg; John Marshall Karns, Eldorado.

TWENTY-FIFTH DISTRICT — Republican: Edward E. Denison, Marion; Fred D. Nellis, Cairo; James S. Fleming, West Frankfort. Democratic: Stella E. Hutson, Benton; Abijah Huggins, DuQuoin; A. A. Brands, Prairie du Rocher, Philip N. Lewis, Marion. Socialist: David W. Kennedy, DuQuoin.

Original Articles

SURGERY VS. X-RAY AND RADIUM THERAPY IN THE TREATMENT OF TUMORS OF THE UTERUS*

G. W. CRILE, M. D.,
Cleveland Clinic
CLEVELAND, OHIO

The discovery of the x-rays and of radium and the development of the technique of their application introduced a basis for differences of opinion as to the treatment of tumors of the uterus which has made it imperative to examine critically the evidence presented by the results of various methods of treatment or of combinations of methods.

The American College of Surgeons deemed such a comparative study of the treatment of carcinoma of the uterus of such importance that carcinoma of the cervix was chosen as the first subject for intensive study. In the Cleveland Clinic the whole problem of the correlation of x-ray, radium and surgery in the treatment of tumors of the uterus—both benign and malignant—is under investigation.

Treatment of Benign Tumors of Uterus—We are in accord with the conclusion of John G. Clark that near, during or after the menopause, intramural fibroids of moderate size or fibrosis associated with hemorrhage should be treated by radium or radium plus deep x-ray therapy, unless the tumor is sub-mucosal or sub-peritoneal, in which case radiation will probably fail.

In my judgment, on the other hand, in the child bearing period, radium and x-ray should be used only in the treatment of cancer of the cervix. Since, in the treatment of fibroid tumors surgery carries an operative mortality of less than one per cent with permanent relief in about 100 per cent; since surgery assures the preservation of 100 per cent ovarian balance, and preserves to a surprising degree the child bearing function, there would seem to be no question regarding the use of surgery in the treatment of fibroid tumors within the child bearing period unless for some general reason the patient is not a good surgical risk.

The technique of partial or of pan-hysterectomy and of myomectomy, is now so perfected that any description here would be a waste of time. There is one type of operation, however, by which we have formerly been baffled and which we now apparently have conquered—that is, the removal of a fibroma or a myoma from a pregnant uterus in which the growth is so situated that the obstetrician sees clearly that normal delivery cannot be made and that a premature abortion will destroy the fetus and to some extent imperil the mother.

We have found by experience that in such a case when a miscarriage attended operation, it did not occur during nor immediately after the operation, but usually twenty-four or more hours later—the miscarriage being preceded by a period of labor pains. In considering the large numbers of physical injuries unattended by fear that a woman may sustain without miscarriage, and on the other hand, the frequency with which a miscarriage occurs as the result of a strong emotional shock, it occurred to me that the removal of the emotional factor might obviate the danger of miscarriage.

The following plan of management was therefore adopted:

1. That the patient be kept in ignorance of the day appointed for the operation.
2. That a physiologic dose of morphine be given an hour before the administration of the anesthetic.
3. That the patient be given light nitrous-oxid-oxygen anesthesia in bed and be taken under light nitrous-oxid-oxygen anesthesia to the operating room.
4. That during operation the entire field—abdominal and uterine—be blocked with novocaine.
5. That during operation handling of tissues be reduced to a minimum.
6. That the patient be returned to her bed under light nitrous-oxid-oxygen anesthesia.
7. That the patient be kept under morphin for forty-eight hours after operation as in the Alonzo Clark treatment of peritonitis, much water being given during this period.
8. That at the end of forty-eight hours, the morphin be diminished, unless the slightest rythmic pain occurs, in which case morphin should again be increased.

By this plan of management I have taken out myomata as large as the fetus and have even

*Read before Tri-State District Medical Association October, 1923, at Des Moines, Iowa.

exposed the placenta without a single post-operative contraction pain. One patient later gave a normal birth to twins.

The total series of my associates and myself of fibroid tumors of the uterus includes 1,235 cases.

The Borderline Cases Between Benignancy and Malignancy—A group of cases which appear at the opposite extreme of life offers another type of problem—namely, the woman at the period of or after the menopause in whom examination reveals a normal vagina and a normal cervix, no fibroid and but slight thickening of the uterine wall, the only sign of trouble being a slowly increasing amount of discharge which may or may not be stained with blood. Such patients as these belong in the precancer class, in fact, five or ten per cent show cancer.

Experience has shown that local and general treatment exerts little influence; curetting and intra-uterine treatment sometimes stop the discharge but more frequently no good effect is seen.

What shall we do with these cases? Shall we wait and see what happens? This courts disaster.

Shall we advise surgery or treatment with radium and the x-rays? Surgery must be used in these cases just as if it were certain that there was a fundus cancer—we know there is no cervical cancer.

As a substitute for operation we may use radium and deep x-ray therapy, but the advantage of radiation as compared with surgery in the treatment of cancer of the fundus is not clearly established. If there is no cancer, in certain cases either radiation or surgery will do well, but in general surgery is better than radiation, for radiation will not relieve cases of submucous fibromata; nor will it relieve the cases in which there is degeneration of the wall of the uterus from arteriosclerosis of the uterine artery.

The following point may justly be raised: Why be in doubt as to the presence of cancer, when by a curettage that fact can be ascertained?

First of all, in its earliest stage, cancer may be missed and no cancer cells may be demonstrated in the curettings. My opinion is that a hysterectomy is indicated whether or not a cancer is found. If there is no cancer today, do we know that there will not be a cancer another day? Moreover, these senile changes are usually not cleared up by curettage; and finally, vaginal hysterectomy prolongs the operation for only a few minutes beyond the curettage, and the risk is almost nil; that is to say, the patient secures safety against the future and relief from local trouble at the expense of but a trivial discomfort and a negligible risk.

Carcinoma of the Fundus.—In doubtful no less than frank cases of carcinoma of the fundus, surgery—vaginal hysterectomy—is indicated.

The same procedures are employed when the diagnosis of carcinoma is definitely established with the following added precaution to prevent the implantation of cancer cells: before operation gauze saturated with alcohol is passed well within the cervix and held firmly by means of heavy clamps.

In the certainly inoperable cases radium alone or in combination with deep x-ray therapy offers the best method of palliation.

Carcinoma of the Cervix.—In a case of suspected carcinoma of the cervix a section is first made for microscopical diagnosis. If the diagnosis was confirmed, our method in the past was to destroy the local growth with the cautery and to pack the vagina with alcohol sponges which were left in place over night. The following day an obdominal hysterectomy was performed with a wide dissection of the parametrium and the broad ligaments, an iodoform drain being placed well within the wound. These procedures applied to the certainly operable period, the operation being followed promptly by radium.

At present, however, because of the favorable results of radium and deep x-ray therapy in inoperable cases and the indications of its value in all stages of carcinoma of the cervix, we are not using surgery in any of these cases. We are, however, holding our final judgment in abeyance until a sufficient time shall have elapsed for a definite comparison of the three and five-year results of radiation in early cases to be made.

Our total series of cases of carcinoma of the uterus includes 362 cases among which 107 were cases of cancer of the fundus. The end-results among the cases of carcinoma of the

cervix as they stand to date are given in the following table:

Number of cases cancer of cervix		255
Not treated		22
Probable carcinoma, diagnosis uncertain		10
Cases available for study of operability, mortality, etc.		223
Radical operation	60	
Palliative operation	109	
No operation—(radium and X-ray only)	54	
Deaths—radical operations		4
Radical operation mortality		6.6%
Cases heard from		79
Radical operations, heard from	24	
Palliative operations plus radium and X-ray, heard from	25	
No operations (radium and X-ray only)	30	
Number of cases surviving (5 yrs.) heard from		8
Number of cases surviving (10 yrs.) heard from		3
Percentage of 5 year survivals (all operations)		16.3%
Percentage of 3 year survivals		37.5%

The inadequacy of these survival percentages in the above table should be noted as in some of the cases heard from the five-year period has not elapsed. These survival percentages are presented therefore as the figures of the moment—an indication rather than an established fact.

SUMMARY

Our judgment *at this date* as to the treatment of benign and malignant tumors of the uterus may be summarized as follows:

1. Benign Tumors:

(a) Within the child bearing period, partial or pan-hysterectomy or myomectomy.

(b) In association with pregnancy, if the operation cannot be delayed, operation under complete anociation.

(c) At the period of, or after the menopause, radium or radium plus deep x-ray therapy unless the tumor is sub-mucosal or subperitoneal.

2. Borderline Cases:

The same treatment as that used when diagnosis of cancer of the fundus is certain.

3. Cancer of the Fundus:

(a) In all operable cases—vaginal hysterectomy.

(b) In inoperable cases, radium alone or in combination with deep x-ray therapy.

4. Cancer of the Cervix:

Radium and deep x-ray therapy, with reservation of final judgment as to the abandonment of surgery.

General Note:

In every case, the patient should be strictly individualized.

REPORT OF A CASE OF UNUSUAL ENDOCARDITIS.*

MILTON E. ROSE, M. D.

DECATUR, ILL.

Unusual and interesting cases come to all of us stimulating our interest and study in medicine. In reporting them, some of us will be able to derive benefit from the experience of others which such reports contain. In recording the following case I wish to emphasize particularly the ease with which one may approach a wrong conclusion in diagnosis, especially in chest cases. Although this type of case is encountered but rarely in the average medical practice, certain of the symptoms and physical findings are frequently seen, and therefore from the standpoint of differential diagnosis, the case is also of interest.

A male, twenty years of age, entered the hospital March 15 complaining of cough, hemoptysis, fever and weakness. His habits had been good and his family history was negative. Three and one-half years ago he had influenza which was followed by a bronchitis. He recovered from this promptly, and remained well until last summer, when his present illness began. He first noticed a general malaise which developed gradually. After a few months it was noticed he had a slight daily rise in temperature, but there was no cough. He consulted a physician in August for relief from these symptoms. A diagnosis of malaria was made, and he was given 30 grains of quinine a day without relief. The symptoms of malaise and fever continued, and in November he began to cough. In December a second physician diagnosed malaria and gave the patient quinine intravenously. As far as the patient or his mother knows he had had not more than two or three chills during these five months that he had been ill.

In January the symptoms abated somewhat and he felt improved. On February 5, however, he developed an acute ethmoidal sinus infection, and he was taken to St. Louis immediately, where drainage was performed. While there, he was examined very carefully and thoroughly by an able internist, who, rather reluctantly I believe, diagnosed an early active tuberculosis, for he informed me that there were no rales on

*Read at Annual Meeting of the Illinois State Medical Society, at Decatur, May 16, 1923.

auscultation, and the few physical findings in the lungs were altogether out of proportion to the temperature, fast heart, etc. The fluoroscopic and stereoscopic examinations of the chest at this time showed considerable hilar and peribronchial thickening and a slight mottling opposite the left hilus region in the region of the third and fourth rib anteriorally which might have suggested a possible very early tuberculous activity. The leucocyte count was 16,000, of which 82 per cent. were polymorphonuclears. No malarial parasites were found, and the complement fixation test for tuberculosis, gave a

Fig. 1. Chest Plate Taken on Admission.

negative reaction. No tubercle bacilli were found in the sputum.

With the diagnosis, therefore, of an early active tuberculosis, he returned to his home in February and was put upon strict sanatorium regime, absolute rest, etc., under the supervision of his competent physician. He remained in bed five weeks, and was then brought to Decatur on March 15. The temperature ranged from normal in the morning to 103-104 in the afternoon, the pulse from 120 to 140, and the respiration from 26 to 32. The cough was pronounced, and for three days he had been expectorating a moderate quantity of bright red blood with practically no purulent material. He was extremely weak but had no pain.

Physical examination revealed negative findings throughout, excepting impaired resonance and diminished breath sounds over an area corresponding approximately to the right middle lobe. No rales were heard in the lungs, and the heart findings were normal excepting the increased rate and a markedly accentuated second pulmonic sound. There were 16,000 leucocytes, of which 85 per cent. were polys, the sputum on several examinations was negative for tubercle bacilli, and the urine contained a light cloud of albumin with a few hyalin casts.

The x-ray revealed a condition in the lungs vastly different from that found five weeks previously. In the region of the right middle lobe there was a well defined round shadow (Fig. 1) indicating the presence of a mass about the size of a small orange. Accompanied, as it was, by a septic temperature and leucocytosis, it was thought that this mass represented an acute circumscribed non-tuberculous inflammatory process, that is an abscess, either intra-lobular or within the lung and not communicating with a bronchus. Although such a condition is not at all uncommon following operations on infected tonsils, it rarely, perhaps, follows nasal or sinus drainage. However, the rapidity with which the process apparently developed suggested strongly a transferance of infection following the ethmoidal drainage.

The circumscribed area was aspirated several times and each time blood was obtained but no pus could be located. A second Roentgenological examination (7 days after the first) revealed considerable increase in the size of the mass as seen in Fig. 2. The plates were taken immediately following an artificial pneumothorax, in an attempt to determine more precisely the exact location of the mass.

The patient died two weeks after entering the hospital. The septic temperature and rapid pulse continued until death, and at no time was there a cardiac murmur detected. Death occurred quite suddenly at night following a free hemoptysis.

Post-mortem examination revealed a subacute endocarditis involving both left and right sides of the heart with a vegetative endocarditis on the tricuspid valve; multiple hemorrhagic in-

farctions in the lung, and a large hemorrhagic abscess containing a large laminated blood clot.

It was this latter which gave the well-defined circular shadow on the Roentgenograms, and it is the opinion of the pathologist that this represented a progressive hemorrhage into an old abscess cavity, undoubtedly resulting from the rupture of an aneurysmal dilatation of a branch of the pulmonary artery. No tubercles were found.

CONCLUSIONS

It has been frequently stated that the facts necessary for a diagnosis of subacute bacterial endocarditis are principally the following: The signs of a definite organic heart lesion, those of a prolonged sepsis with fever and anemia, those of embolism, and positive blood cultures.

In the case reported, no physical signs of a definite organic heart lesion were elicited during the two weeks the patient was observed prior to his death.

The very evident lung finding were misleading in that they pointed strongly to a primary lung or pleural infection and caused the heart to escape suspicion. In such cases, therefore, repeated blood cultures are valuable is establishing whether a bacteremia or only a localized infection is present.

In all cases of prolonged sepsis and fever with obscure cardiac findings, the discovery of definite pathology in other parts of the body should not cause one to neglect to disprove the presence of an endocarditis.

134-136 West Prairie Avenue.

DISCUSSION

Dr. Damon A. Brown, Peoria: Dr. Rose has coverd this case so completely that it leaves little for discussion.

Seeing the case as late as he did, I would like to ask Dr. Rose something about the early history.

There is brought out the question of a septic temperature with a very rapid pulse and practically negative findings meaning endocarditis. In the absence of positive physical findings where a septic temperature and rapid pulse are present, what are the possibilities of an endocarditis? Would you suspect an endocarditis without having the physical signs of cardiac disease, such as murmurs or enlargement, or any other findings, which might direct the attention to the heart? In this case, the individual had been treated twice for malaria; very evidently the diagnosis was wrong.

The man whom the patient saw in St. Louis made a positive diagnosis of tuberculosis. At the time of examination the patient probably had a beginning of his hemorrhagic infarct and the physical findings were probably a basis for the diagnosis of T. B. One of the most important things in the case, it seems to me, is the previous history of infectious disease such as tonsillitis or any other focal infection, which might have been the exciting cause of this illness. With the septic temperature and a rapid pulse and the absence of very definite physical findings in the lungs, it seems to me that T. B. would not have been a possible diagnosis. A septic pulmonary abscess would have been more likely.

Recently we had a patient with chronic endocarditis, a girl 13 years old. At the age of six she began having attacks of tonsillitis followed within a short time by repeated attacks of arthritis. At the time we first saw her, she had had no arthritis or attacks of

Fig. 2. Chest Plate Taken One Week After Admission.

tonsillitis for about two years. She was complaining of pain in the abdomen with gastric symptoms. When we first went over her, we found no abnormality in the heart with the exception of a slight enlargement and a rapid rate, from 120 to 140. Temperature 99 to 100. Very tender over McBurney's point, and we made a tentative diagnosis of sub-acute appendicitis. While she was in the hospital, under observation preliminary to operation, her temperature rose to 103 and pulse rate increased without a corresponding increase of leucocytes.

A more careful examination of the heart at this time revealed a systolic murmur which had not been present when we first examined her. From this time on she became progressively worse and the question of doing a tonsillectomy arose. We hesitated subjecting her to anything as serious as a tonsillectomy and that is a question which I would like to bring

out here. If you have a child with definitely diseased tonsils and a well developed endocarditis, which is progressing, and the child is extremely sick, are you justified in subjecting the patient to this surgical procedure? This patient developed a cerebral embolism and died very suddenly.

I want to congratulate Dr. Rose for so completely presenting such a very interesting case.

DR. FRANK DENEEN, Bloomington: To me the real essence of this case is not so much the technique of diagnosis of endocarditis as it is the fact that every day almost some of us are brought face to face with the diagnosis of incipient tuberculosis and early tuberculosis. It seems to me and to some of us who work together that incipient tuberculosis is being diagnosed at random when you have a constant running temperature slightly toxic and you find no apparent cause for it, you diagnose incipient tuberculosis. And the more I see of it the more I find out there is no tuberculosis whatever. Fortunately, most of the cases I diagnosed as incipient tuberculosis do not go to the fatal outcome this one did. Most of them get well. They have a low-grade infection elsewhere, such as in the gall-bladder or appendix or the prostate and they run that low-grade temperature for quite a while.

Recently I had a little girl who went for a year with a diagnosis of incipient tuberculosis and no positive sputum. Occasionally she would get a rale in that lung as most everyone will. And yet that girl cleared up absolutely upon ordinary biliary drainage, medical biliary drainage. That case comes to my mind clearly because she had a positive x-ray diagnosis of tuberculosis. All of us have seen those constantly. It teaches that is one reason incipient tuberculosis is no diagnosis whatever and, best of all, positive sputum does not diagnose incipient tuberculosis.

DR. C. GEORGE APPELLE,, Champaign: A point which bears repeated mention in these cases is the comparative absence of any definite cardiac findings. That has been a characteristic feature of the few cases which have come under my observation.

Dr. Brown raises the interesting question as to the ultimate recovery of these cases. On this point I wish to cite a case which was a very definite old endocarditis, that is, an old mitral lesion. This man at 25 years of age, had a very bad rheumatic attack which left his heart crippled. When I saw him two years ago, he was then about 49 years old, he complained of weakness and pain in the right upper quadrant of the abdomen. He had a slight temperature. With some findings in the right apex, I thought of an old healed pulmonary tuberculosis with a secondary involvement of the right kidney. The urine showed albumin, pus, blood and casts.

He had an old mitral valve lesion, which we thought could be ignored. I told this man to go to bed and stay there. He insisted upon working. In about two weeks they brought him home from work. He complained of a severe headache and marked weakness. His temperature was about 103. The white count ranged around 18,000. A blood culture was negative for typhoid as was also the Widal test. The blood Wassermann test was negative for lues. I was perplexed as to the nature of the man's trouble.

I worked on the job about a week when I came to the conclusion that this man had a subacute bacterial endocarditis.

Three additional blood cultures were made on successive days two of which showed streptococci. In a few days he developed acute pain in the left hypochondrium which was followed by weakness of the left lower extremity and definite foot drop. These embolic manifestations link up with the pain in the right kidney region for which the patient originally sought relief.

I might add that two guinea pigs which were injected with urinary sediment remained free from tuberculosis.

Throughout the course of this case there were no alarming symptoms referable to the heart, nevertheless the case went to a fatal termination in about four months from the date of my first examination.

It is, perhaps, problematical as to what per cent of these cases recover permanently.

DR. S. E. MUNSON, Springfield: I think this case and the discussions only bring more definitely to our minds the importance of diagnosis. In the first place, where there are not cardiac symptoms, where there is not a definite history to indicate the source that might cause the endocarditis, and you find your patient with a continuous temperature, above normal at least a temperature every day, with sweating, emaciation, loss of appetite, and all the other manifestations of tuberculosis—it is certainly up to the physician to get busy and determine in every way that is possible, with the assistance of the laboratory, if his patient has tuberculosis.

In the absence of finding tuberculosis or acute Graves' disease or other local manifestations, he should always suspect endocarditis. That is the one point that I wish to emphasize.

My experience with the treatment of endocarditis is that you must suspect it in these cases when unable to make a diagnosis of tuberculosis as the cause of your temperature, loss of appetite and emaciation.

I remember seeing a case that went through the hands of quite a few physicians. When the case was referred to me by another physician, he said he had had repeated negative blood cultures. In the absence of anything else to be found, I concluded that there must be tuberculosis somewhere. The patient naturally, without getting any better, and without a definite diagnosis, left me and fianlly stayed at home. It was only a short time before this man's death that positive cultures were found of streptococcus viridans. At the post-mortem there was the typical nodule, on

the leaflet of one of the aortic valves, that finally caused the man's death.

Now in regard to the treatment of these cases. I think that is an important point. I can't say that the essayist definitely took up the treatment, but some of the discussions are headed that way, so I will say a few words about it.

A very interesting paper was presented last year at the American Congress of Physicians at the Mayo Clinic by Dr. Leonard M. Murray, who was Surgeon-in-Chief of the Canadian forces during the late war. He reported 200 cases of endocarditis, particularly among the soldiers in the service, with post-mortem. There wasn't any favorable prognosis or any treatment mentioned that had favorably terminated any of these cases. The recoveries were only one per cent. He stated positive blood cultures was obtained in about 70 per cent of the cases if Rosenow's method is used, but in many undoubted cases it is impossible to get a positive growth from the blood. The organism found in 80 per cent. of cases was streptococcus viridans; streptococcus hemolyticus in all the remainder except two, which were due to staphylococcus aureus.

Dr. Joseph Capps, in the *American Journal of Medical Sciences,* mentioned fifteen cases that were treated with cacodylate of soda. In the fifteen cases, I think he reported two recoveries. I don't remember just the classification in which he placed them.

During the clinical trip recently of the Tri-State Medical Society almost in every clinic we visited, the subject of endocarditis was discussed. At the University of Pennsylvania, Dr. E. B. Piper brought to our attention the use of mercurochrome, a treatment which he had used with septic blood infections. They had better success with this treatment than they had following cacodylate of soda. As I remember, it is one per cent. with an intravenous injection of 30 to 40 c.c. each 24 hours. Anyone caring to try this in their cases of endocarditis, by writing to Hynson, Westcott & Dunning, the manufacturers, could get from them the exact data for its use.

I just lost a case this morning of septic endocarditis. A young man, 17 years old, gave a distinct history of rheumatism. The blood culture showed pneumococcus. We used cacodylate of soda in this case. The temperature had been normal for the last six weeks, and the pulse even without anything to control it, had been running around 100, but the heart was very largely dilated and just simply a shell. Of course negative temperatures for long periods of time does not prove that the infection has subsided and will lnot return.

DR. FRANK SMITHIES, Chicago: What I have to say must not be taken in any way as a criticism of Dr. Rose's splendidly presented case. I am discussing his paper at the request of Dr. Jack.

I want to emphasize one thing. It has been stated in this paper and by the discussants that there were no heart signs in the patient in question. Now, there were no heart signs apparently if one means by such "bruits" or other abnormal sounds, but I think that is a mistake that is too frequently made in the acute infections: men listen for murmurs and atypic sounds and if such are not there are prone to consider the heart as not affected. In some of the most serious instances of heart disease, there are absolutely no atypic murmurs and one must not expect them.

If I may be pardoned any thought of criticism here, I beg to call your attention to the fact that there were, in this case, what I would consider atypic cardiac function. First, the patient had a frequent pulse out of all proportion to the physical signs or the temperature. Second, as the case progressed, persistent and definite accentuation of the pulmonic second sound and, as the x-rays have demonstrated, gradual, progressive enlargement of the left auricle. I would consider those observations as indicating a very strong suspicion that we have to expect some evidences of disease in the endocardium even though that patient never at any time developed atypic sounds, such as murmurs.

With regard to the blood cultures. One must get sufficient blood to make a culture. Not just as much blood as for a Wassermann, but 50 to even 100 or more c.c., implant it in a suitable fluid, and frequently plant it and transplant it, culturing aerobically and anaerobically. There are periods in which the blood is entirely negative because at those times the vegetations are not liberating their abscess contents in to the blood stream. It must be then, a continuous search over a long period for evidences of blood infection.

The history of the termination of the case I think was characteristic so far as the x-ray is concerned. Specifically, first a triangular shadow of infarction with an area later developing of liquefaction necrosis, into which there occurred hemorrhage.

Regarding treatment, it has been observed that one may be led astray by the events following the use of salvarsan or atoxyl. These beneficial results may be spontaneous "cures" which have occurred, at about the time that the individual has been given a particular drug; whether or not he had given this drug, there would have occurred a period of quiescence. And such may last for varying periods of time.

Fourteen years ago, full reports were printed respecting the use of arsenicals in endocarditis; the procedure recently has been revived. Murray of Toronto, than whom no clinician has had a more extensive experience, recently commented on the mortality. He observed a death rate of about 92 per cent. in instances of sub-acute endocarditis, and this rate was not influenced by whether arsenicals had or had not been administered.

We have followed a procedure in these cases which seem worthy of more extensive use. As soon as the diagnosis is made, we give these patients whole blood transfusion, promptly. It is hopeless to expect to inject into the blood stream enough medicines to kill

the bacteria without harming other tissues. We aim by transfusions of whole blood to increase the fighting power of the blood and so destroy infection. With this object, early, before secondary damage occurs, it is our custom, at two or three day intervals, to transfuse from 500-1000 c.c. of whole blood by the Kimpton-Brown-Percy method.

DR. EDWARD BOWE, Jacksonville: This paper recalls a paper under discussion this morning and in which the question of early recognition of the primary pathology was discussed. In the case now under discussion, we no doubt have the history of a bacteremia covering a period of some time. The early history and laboratory findings in this case would be of much interest, and no doubt assist in clearing up the diagnosis.

Bacteria have certain outstanding characteristics as to habitat, location, growth, etc., and just so in the reaction of the human body to their invasion there are definite resultant pathological conditions with an accompanying and characteristic symptom complex fairly constant in all cases, from the earliest period of bacterial invasion in the body. An early recognition of the infecting agent affords a better understanding of the type of disease with which we are dealing, and is also of great value in determining prognosis and treatment.

In my opinion, such terms as rheumatism, endocarditis and myocarditis are indefinite and convey only a partial explanation of the pathology that generally is present in patients where such conditions are found, because they are generally but localized manifestations in a symptom complex whose pathology in the great majority of cases is a bacteremia in which these conditions are outstanding symptoms. A more intelligent and enlightening nomenclature would be to give the infecting agent as applied to the blood stream and accompanied by these conditions.

Regarding treatment and prognosis. Rational treatment can only be administered when the infecting agent is recognized and prognosis is dependent largely upon the virulence of the strain of the infecting bacteria and the natural or acquired immunity of the patient.

DR. J. E. TUITE, Rockford: I think that Dr. Rose has rather modestly kept himself in the background. I corresponded with him sometime ago and asked him to present a paper. He said he had an unusual case of endocarditis but the exact name of his paper he could not give me until later because he thought the man would die.

I can assure you that he has made a diagnosis months ago in this particular case. I think he has done it by the very methods which he has left open for discussion.

DR. MILTON E. ROSE, Decatur, Ill. (closing): Inasmuch as the discussion has been very thorough and instructive, and has taken up a good deal of time, I will say nothing further.

WHAT PROGRESS IS BEING MADE IN THE TREATMENT OF CANCER?*

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What Is Cancer? Much effort has been made to find an answer to this question, but thus far no solution has been proven. About all we know of the disease is how it acts. Its origin seems to be as securely hidden as the mystery of life itself. In considering the subject it is well to detach oneself from preconceived ideas of cancer, for many misconceptions have arisen and the fog enveloping the question seems impenetrable.

It may be well to start out with the idea that each cell is controlled by two equally balanced forces; one an impulse to multiply, the other inhibiting this impulse. Weigert and Roux believed that the regenerative capacity of cells is determined from the moment of their derivation from the ovum and can never be increased by any external stimulus. Granted that this is true it follows that each cell would multiply indefinitely, provided it was supplied with sufficient nutrition, were it not for some restraining force outside the cell itself.

What this inhibiting power is, from what it comes, and how it acts has never been satisfactorily determined. The mechanical pressure of the cells on each other coupled with a proper supply of nutriment has been suggested but not proven. It is thought the answer may be found in the biochemical laboratory. Borst assumes that inflammatory overgrowth results from response to external irritants while neoplastic growth arises from the loss of the normal restraints to growth. It may be summed up as far as now known that each cell carries within itself its own motor and that the brake is an external mechanism.

Within the organism, as long as the tissues are normal, all is quiescent. Each cell retains its normal place and function. If there is a call for new cells, as when tissue is lost by trauma, the inhibition to cell multiplication is temporarily withdrawn and the cell divides, two new cells resulting. As soon as the lost tissue has been restored the inhibiting agent puts on

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the brakes and each cell again assumes its normal relation to its environment.

Suppose the inhibition is permanently lost, the cells can do nothing but continue to multiply without check. Such a condition is my conception of cancer. Thus it is seen that inflammation and cancer act exactly in the same way, their only difference being that in the former the loss of cell inhibition is temporary while in the latter it is permanent. As Ewing would put it, "anaplastic cells are not embryonal cells, but a new type that have lost their place in the organization. More or less anaplastic cells occur in inflammation, but there are many degrees in anaplasia, and its occurrence in inflammation accords with the fact that inflammatory hyperplasia may pass into neoplastic." To Billroth's dictum, "Without previous chronic inflammation cancer does not exist," there has never been convincing refutation. It is impossible to conceive of a normal cell taking on the attributes of malignancy. A cancerous growth can only start from a cell which has lost its physiological restraints.

Tissue Resistance to Cancer. It is not to be taken for granted that when cancer appears the tissues of the host permit the invasion without resistance. Quoting from Ludin: "Rhodenburg's data in the *American Journal of Cancer Research* prove that in at least 100 well-authenticated, inoperable and apparently hopeless cases of cancer (microscopic diagnosis) spontaneous and complete regression of the tumors occurred." These cases prove that the human body can wage a winning fight against malignancy. Sometime a way may be discovered by which the tissues may be aided in this struggle against an invading foe and be of material assistance in bringing about a cure.

Precancerous Conditions. If it were possible to recognize the conditions which must be present to suspend cell inhibition it would be possible to deal with them before cancer has had time to develop. Thus far all that has been possible is to discover that certain conditions and lesions very frequently precede the occurrence of cancer.

Some of our pathologists are inclined to jeer at the idea of precancerous lesions. Perhaps the term is not a happy one, but it expresses the idea. There is good ground for the belief that certain lesions prepare the soil for the development of cancer. If malignant disease can only arise as a result of diseased cell function the person who has no pathological tissue is immune. It is vain to hope that it will ever be possible to rid the human body of all pathology, but there are so many accessible and curable lesions which produce the conditions that make cancer possible that much more can be done than has been done. If favorable seed beds could be decreased one-half it seems reasonable that the incidence of cancer would be divided by two.

In the tissues and organs in which most cancers have their origin there are lesions which are followed by cancerous growths so often that the etiological connection cannot be ignored. Chronic leukoplakia and the irritation from jagged teeth furnish the site upon which carcinoma of the tongue develops so frequently that their causative relationship is mathematically proven. The man who goes around with a fissured lip, whether the fissure is caused by pipe-smoking, or by the effect of heat and cold or as the result of chewing a lead pencil is under constant risk of having cancer develop at the base or border of the fissure.

Following along down the line there has been much discussion with regard to carcinoma originating in gastric ulcer and there are still some who deny any relationship, asserting that when an ulcer is found that contains carcinoma it was a malignant ulcer from the start. There seems such an overwhelming amount of evidence that it seems perfectly fair to put gastric ulcer of the indurated type in the list of precancerous lesions.

The scarred cervix kept irritated constantly by a purulent discharge passing over it is potentially a carcinoma. If the irritation continues long enough the result is almost certain. There are also the chimney sweep's cancer, that of the betel-nut chewers, the cancer which develops in the scar of old burns and of varicose ulcers. Thousands of lesions come to the attention of doctors daily that carry with them a warning of danger. The ease and safety with which these lesions can be cured while still be nign and the terrible menace they become when malignancy has developed, place a solemn responsibility upon all members of the profession to get rid of these precancerous stigmata when-

ever and wherever they are brought to their attention.

Is Cancer Increasing? A study of the U. S. Mortality Reports for the past twenty years shows definite increase. (See Table 1.) The accuracy of these reports has been questioned and when it is considered that in the best modern hospitals not more than 60 to 80 per cent of the diagnoses are correct a grave doubt exists in regard to the accuracy of mortality reports unless substantiated by operation or autopsy. Twenty-five or thirty years ago when the life-saving operation for appendicitis began to be done in large numbers the mortality reports showed a greatly increased number of deaths from appendicitis. This was readily explained on the ground that the knowledge about appendicitis had made it possible for the diagnosis to be correctly made. No more, not as many, deaths occurred, but those that did occur were reported under the correct caption. The same was true of tuberculosis when the far-reaching campaign against the disease was at its height and explained in the same way. It seems probable that the increasing knowledge of cancer has caused more diagnoses to be made and consequently more deaths reported as due to this disease. Many deaths reported even now as due to old age are doubtless really due to cancer of the stomach.

To prepare Table I, I have computed the number of people 45 years old and over and the number of deaths from cancer of people 45 years and over. From the aggregate of these the number of deaths from cancer or tumor per 100,000 of those who have reached the ages of 45 years or over is obtained. Only the states whose Mortality Reports are complete for the last three census reports have been included. These states have the additional advantage of having only a small percentage of colored population. As is readily seen by referring to the percentages in the brackets the decennial increase in cancer mortality is apparently as great when figuring only those of the cancer age as when the total population is included.

It is not the purpose of this paper to discuss exhaustively regional cancer, but a casual study of the results attained by some of the foremost surgeons by showing what has been accomplished in spite of the handicaps of many late cases, may give us some notion of the possibilities when late cases are the exception and early operations the rule.

Cancer of the Tongue. Here is a region where prophylaxis can accomplish wonders. The good modern dentists are doing a great work in keeping the mouth healthy and free of the myriad sources of irritation which are a fruitful cause of tongue cancer. The leukoplakias need careful treatment. Small cracks and benign ulcers are frequent and serious if not soon cured.

Bloodgood in a study of 260 cases of cancer of the tongue found there were 62 per cent 5-year cures among cases operated on early and only 12 per cent 5-year cures among those operated on late. In other words, out of each 100 cases 50 more are cured if operated on early than if operated on late. In the experience of the Mayo Clinic more than 60 per cent were found inoperable.

During the past few years the mode of dealing with cancer of the tongue has been considerably modified. There seems little doubt that removal of the local lesion by the cautery, courageously employed, or by radium is replacing the knife. In all these cases the radical removal of the cervical glands by block dissection as practiced by Crile seems to be rational and to be in accord with the methods found so useful in other regions, notably the breast.

Cancer of the Lip. Here prophylaxis and operation on the cases while localized will be followed by a large percentage of cures. Sistrunk's report of cases from the Mayo Clinic are so instructive that they will bear study. He reports them under three groups: Group 1 Glands not involved, local lesion excised and glands removed; 98 cases, 90.3 per cent alive 5 to 8 years. Group 2. Glands involved, local lesion excised and neck dissected; 11 cases, 18.1 per cent alive 5 to 8 years. Group 3. Only growth removed, glands not excised; 27 cases, 79.2 per cent alive 5 to 8 years. It will be seen that in 100 cases 72 more were saved when done before the glands were involved than in the later cases.

Cancer of the Breast. Cancer of the breast has been used as an example of what may be done by early operation. It has been demonstrated by actual cases that when operated on early 70 to 85 per cent can be cured. The problem has been to get them early and in my experience there has been a definite gain in this

regard since the campaign of the American Society for the Control of Cancer was started. Fully 50 per cent of breast tumors that come to me are benign, and 40 per cent of the remainder require an exploratory operation, with a frozen section of many of them, before they are proven to be malignant. This is the most encouraging reaction to the efforts to educate the public I have yet seen. As an index of the more favorable results in early cases Table II is illuminating, it being taken from the records of Greenough and Simmons. In Sistrunk's cases the five-year cures were 65.1 per cent of the cases operated on early before the glands were involved, against 22.0 per cent of those operated on when the glands were involved.

Radical operation has not been replaced by any of the newer methods of treatment. Woglom says: "Neither radium nor the x-ray has done what was at first hoped for from them. There is no doubt that they can often be very useful as a supplementary treatment, and perhaps in the future we may learn so to control them that they may be of more distinct value than they are now. At present, however, any dose that is intense enough to destroy the cancer cell may prove intense enough to destroy the healthy cells in the neighborhood."

As an indication of the wisdom of a cautious adoption of the x-ray the report of Tichy on cases of cancer of the breast treated at Marburg deserves consideration. Tichy divides the cases into three groups and it must be explained that each group comprises all the cases treated during the years indicated. There was no selection of cases:

Group 1. The cases treated during the years 1904-1914 were not x-rayed after operation.

Group 2. The cases treated during the years 1914-1917, scar x-rayed lightly after operation.

Group 3. The cases treated during the years 1918-1919, intensively x-rayed after operation.

Table 3 gives the results at Marburg reported by Tichy, the results at Tübingen reported by Perthes, and the results in Parry's Clinic at Leipzig as reported by Kastner, all using the same groups.

As will be seen by studying the table the most unfavorable results were with the cases intensively x-rayed. It was especially noted that more cases died of metastases and the internal metastases were more numerous and very marked among those x-rayed intensively. In my own experience for a number of years the x-ray has been used post-operatively in most cases, but I am not yet convinced that it adds to the chance of cure and in some cases it has seemed to be detrimental. Much careful observation will be required to prove the value of the x-ray in breast cancer. The Cancer Research laboratories are studying the problem carefully and authoritative conclusions will soon be reached.

Cancer of the Stomach. Diminution in the mortality from gastric cancer is beset with difficulties that do not exist in most of the other regions, because of the insidious onset of the disease. Before sufficient clinical symptoms manifest themselves to cause the patient to consult his doctor the pathology is usually far advanced. Unless located at the entrance or exit of the stomach, in such a position that early obstructive symptoms are produced, the patient may consider himself in normal health until such dramatic symptoms as hematemesis or the passing of tarry stools occurs.

That there is, however, definite opportunity for improvement is evident from the length of time that usually elapses between the first onset of definite symptoms and the date when a physician is first consulted. That this is a real hindrance to progress we have but to think of our own experience. Unfortunately gastric symptoms are so common that the average person bears with them for a long time before seeking relief. Cheever's analysis of the cases admitted to The Peter Bent Brigham Hospital is parallel to that which might be made in most hospitals. (See Table 4.) This is not a very cheering presentation, but the real situation must be faced. Until such a large percentage of late cases can be eliminated it will not be possible to make progress. Long and strenuous propaganda will be required to overcome this national tendency to put off consulting the doctor.

In a series of 566 cases of proven cancer of the stomach reported by Smithies and Ochsner they found that 239 (41.8 per cent) were cases of cancer following ulcer symptoms, and 182 (32.1 per cent) arose in perfectly healthy subjects. Of the 239 cases chronic gastric disorder had existed for an average of 11.4 years, while of the 182 cases the gastric symptom complex averaged 7.1 months. This is entirely in keep-

ing with the contentions of MacCarty who firmly believes, and his examination of many hundred gastric ulcers proves, that gastric ulcer is a frequent cause of carcinoma.

In the face of evidence like the foregoing, which may be duplicated in many of our clinics, it seems not unreasonable that all gastric ulcers not promptly cured by medical treatment, or that relapse after apparent cure, should be subjected to operation. It is also apparent that the best operation for all ulcers of the indurated type is excision. It is very gratifying to know that this procedure is rapidly growing in favor among many of the best surgeons. Could such treatment be generally followed the incidence of gastric ulcer would be much reduced and some incipient cancers would be removed unwittingly.

Cancer of the Cervix Uteri. In no region of the body has there been so much change recently as in the treatment of cancer when located in the cervix uteri. The Wertheim operation has not been as successful as was hoped. The primary operative mortality has been exceedingly high; nor have the results in those who withstand the operation been greatly superior to those which follow a less formidable procedure. The idea seems to be crystallizing that when a case required such an extensive dissection as in the typical Wertheim it has metastisized so widely that any operation would be a forlorn hope.

For these reasons other means have been sought for combating this fatal malady. In the treatment of advanced and heretofore hopeless cases of cervical carcinoma radium has reached its most brilliant achievement. Surgeons are almost in accord in giving to radium a high position; a few have gone so far as to give it precedence over all other agencies in the treatment of this disease. Most, I think, prefer panhysterectomy, a modified Wertheim, in cases in which the disease is still confined apparently to the cervix, reserving radium for the borderline and advanced cases.

Clark divides carcinoma of the cervix according to the progress it has made into three groups: Group 1. Operable cases, the disease being confined to the cervix as far as can be ascertained. Hysterectomy followed by radium is his treatment for this group.

Group 2. Borderline cases, some invasion of the vagina and broad ligaments being present. This group he begins by a treatment with radium and follows it by hysterectomy if the radium treatment produces a condition which warrants it.

Group 3. Inoperable cases in which the invasion of the surrounding structures is so great that successful operative removal is impossible. In these cases he depends principally upon radium, supplemented, if needful, by local removal of fungating masses by excision, scraping or diathermy.

Taussig reports the result in over 1,000 collected cases of cancer of the cervix treated by radium five years previous to the reports. About 20 per cent were well, approximately the same percentage as by radical operation, though doubtless some of these cases would have been considered inoperable. By groups it was found that more of the advanced and borderline cases were symptomatically cured by radium than by operation, while of the early operable cases the percentage of cures by radium was only thirty-one, against a percentage of cures by operation of forty to forty-five.

In 4,982 cases of cervical carcinoma reported from a number of German and American clinics 1,989 (39.9 per cent) were considered operable. The cases actually operated on were 1,692 with an operative mortality of 313 (18.5 per cent). Of the 1,379 surviving patients 317 (23 per cent) were alive and well five years after the operation. This would be 18.7 per cent of all operated on, or only 6.4 per cent five-year cures of the 4,982 cases from which the cases operated on were selected.

The problem that confronts us is to get a larger proportion of the cases early while still operable. Considering the early period that definite symptoms of carcinoma of the cervix appear, by proper education and reassurance of the women of cancer age, it ought to be possible to get the majority of the cases into the early operable group. Melson says that in his series the average duration of symptoms before the patients came to the clinic was eleven months. The early symptoms are so characteristic that this great lapse of time seems unnecessary. If women could be fully impressed with the gravity of an irregular bloody discharge, frequent and prolonged menstruation, watery discharge, or any staining in women who have passed the

menopause it seems that any delay in consulting their doctor would be exceptional.

With the good results shown all advanced cases should have the benefit of radium. With added experience in technic radium seems destined to replace operation in all but the early cases of cervical carcinoma. Good cooperation between surgeon and radiologist ought to brighten this gloomy chapter.

Cancer of the Fundus Uteri. Two hundred and forty-four cases operated on by Mayer, Mayo Clinic, Clark, Weibel, Waegeli, Prochownik, and Peterson were followed by 20 (8.2 per cent) operative deaths. Of the 224 who survived the operation 148 (66 per cent) were alive and well five or more years after the operation. This would mean 60.6 per cent of the 244 cases operated on. These results are good, but not nearly as good as they would have been if all had been done early. In Melson's report he states that the patients with carcinoma of the fundus coming to the Mayo Clinic had had symptoms on an average of 17.9 months. The good results under such a handicap show how relatively favorable these cases are. If it were possible to operate on all these cases early the cures ought to mount to 80 or 90 per cent.

The results from operation are so good that most surgeons prefer to treat them by panhysterectomy and only refer the very advanced cases for radium treatment. The dictum of Clark ought to meet with general approval. "In cancer of the cervix, when in doubt, use radium. In cancer of the fundus when in doubt, operate."

IS PROGRESS BEING MADE?

Up to the present, it must be admitted, in our fight against cancer the surface has scarcely been scratched. It is true that in early cases a hopeful percentage of cures has been made. But when it is considered how small a proportion of the total number are ever operated on and how low a percentage of those operated on are done while the disease is still early and definitely localized there is really very little upon which to base an opinion of definite progress.

The search for a cause of cancer has been constant and it seems sometimes to overshadow the search for a cure. Many medical men and some surgeons have been lukewarm in advising operation. Pessimism has prevailed in so many quarters that it is little wonder that cancer victims seek solace by going to the quacks who at least speak encouragingly. The charlatans thrive on these poor unfortunates and many well meaning ethical doctors contribute to their prosperity by literally driving their clientele to the man who, at least temporarily, gives them hope.

Let the search for the cause of cancer go on. It is my conviction that when it is discovered it will be found to be a disassociation of the cell from its environment due to age plus irritation or inflammation and the problem facing us in its cure will be exactly what it is now. It does not seem probable that an explanation of the cause of cancer is going to carry with it any great epoch making method of cure. This sounds pessimistic, but it is not meant to be as pessimistic as it sounds. With the present knowledge and with the armamentarium we now possess it is within the possibilities to decrease the present mortality at least 50 per cent, which would mean the saving of at least fifty thousand American lives annually.

Why is the present death rate so high? First: The large number of cancer victims who do not consult a reliable doctor or who never receive intelligent advice—most of whom drift into the hands of quacks.

Second: The very large proportion of cases that are found inoperable when they reach the surgeon.

Third: The many who are operated on so late that cure is impossible.

Fourth: The very small number of cases operated on early, while the disease is still localized.

It is the task of the century to get all of those in the first three groups into the fourth group. The three reasons why an army of cancer victims are swept away annually are the result of a number of contributory factors:

First: Ignorance on the part of the layman.

(a) He does not know the early signs and symptoms.

(b) He believes cancer to be incurable.

(c) He fears the truth and dreads the knife.

(d) Too often, if he consults a doctor, he is met by indifference, vacillation, delay or in some instances, by such pessimism that he takes refuge with the charlatan.

Second: Lack of proper advice by his doctor, due to:

(a) Not sufficient examination or no examination.

(b) The patient is ridiculed and the symptoms regarded as trivial.

(c) Watchful waiting until an early favorable case becomes a late unfavorable case.

(d) A prompt diagnosis but with such discouraging remarks about the prognosis that the patient begins to search for someone who will give him encouragement.

Third: When he finally reaches a surgeon he may find a man so lukewarm and so skeptical about results that he does an inadequate operation or merely a palliative one. It must be understood that no operation is far better than one which does not get beyond the most remote extension of the disease.

Then how *can* progress be made? Is it possible to materially reduce the annual death toll? A complete reversal of the conditions that have contributed to the present awful mortality will have to be made. There is an urgent call for such a widespread, intense, and continuous educational campaign that every layman will know a few concrete facts:

(a) The initial warning signs of cancer as they manifest themselves in the various regions of the body.

(b) That at the beginning cancer is a local disease.

(c) That it is curable if operated on early.

(d) That the knife is their friend when properly used.

Every doctor will have to be alert to each sign or symptom that might spell cancer. It will be necessary for him to make a most thorough and methodical examination of every case as a routine practice. It is also his province to relieve his patients of all those conditions known to precede the development of cancer, such as leukoplakia, fissures of the tongue or lip, gastric ulcers, warts, moles, lacerated cervices, chronic irritations wherever they may be located. If a condition is found which might be cancer or which he cannot say is not cancer there will be no temporizing or mincing of words. Such a case will be given the benefit of an exploratory operation and will not be dismissed until macroscopically and microscopically it is proven to be benign. If not in a posittion to do this himself he will send the patient to a reliable surgeon. The fate of thousands of these patients rests upon the thoroughness, the skill, the promptness and courage of the first doctor consulted.

A grave responsibility also rests upon the surgeon. A very careful examination must be made, and in the history the time noted when the first indication of disease appeared. The exact local condition is also recorded and accurately described, including the location, the size, consistency, and whether adherent and if there is any local infiltration and to what extent. The presence and extent of enlarged glands is also noted; as well as a record of any breaking down of tissue. A complete skeletal and other x-ray examination is also necessary for exactness as well as to make a follow up system of any statistical value.

If after thorough investigation it cannot be proven to be benign he should not hesitate to advise an immediate exploratory operation and be prepared to perform an immediate radical operation if the biopsy reveals malignancy. If his examination shows definite malignancy he must decide upon its operability and plan the operation as a commanding general plans the strategy of a battle. If the disease has progressed considerably with the question of favorable operability in doubt it is well to call in an honest experienced radiologist and let the two bring some real teamwork into the case. In the present status of the cancer situation I would say that the surgeon who operates on an advanced incurable carcinoma is reprehensible, and the radiologist who uses radiation alone for a definitely operable carcinoma is equally blameworthy.

The surgeon who operates for carcinoma has the life or death of the patient in his hands in a double sense. How far he can risk an immediate operative mortality to better insure a permanent cure requires almost uncanny surgical judgment. Makeshift operations have no place in operations for cancer. It is necessary to go wide of the disease in every direction if a permanent cure is to be expected. The surgeon who undertakes this work must be thoroughly conversant with all the avenues over which the disease advances and cut centrifugally to the probable furthest limits. If he expects to have a great many cures he must be ruthless in the removal of tissue and regardless of the length of the scar. Here the viewpoint should be the

exact opposite from that when operating for benign conditions.

It is common observation that many operations for cancer are undertaken which are hopeless from the start. The decision between operability and inoperability is of the utmost importance. It does not contribute to the success of the fight against cancer to operate on hopeless cases, unless it is clearly understood in advance that it is purely palliative to mitigate pain or to get rid of sloughing tissue. In cases frankly inoperable it is usually better to treat them with radium or x-ray or other palliative or curative measures rather than to operate when it is known in advance it will do no permanent good or produce no amelioration of the patient's condition.

Before great progress is made there will have to be genuine coöperation and real team-work among the medical men, the surgeons, the pathologists, the radiologists and the public.

TABLE 1.

U. S. MORTALITY REPORTS—DEATHS FROM CANCER OR TUMOR. RATE PER 100,000 POPULATION IN REGISTERED AREA. RATE OF INCREASE IN BRACKETS.

	1900	1910		1920	
Registered Area	63.0	76.2	(20.9%)	83.4	(35.5%)

Rate in States per 100,000 Population 45 yrs. old and older.

	1900	1910		1920	
Connecticut	263.6	316.8	(20.1%)	429.5	(35.5%)
Maine	283.4	328.6	(15.9%)	409.0	(24.5%)
Massachusetts	288.8	364.5	(26.2%)	450.2	(23.5%)
Michigan	251.3	294.4	(17.1%)	358.6	(21.8%)
New Hampshire	243.6	317.6	(30.3%)	395.7	(24.6%)
New Jersey	238.5	323.4	(35.6%)	380.6	(17.7%)
New York	264.7	345.3	(32.9%)	413.2	(12.7%)
Rhode Island	264.0	351.1	(32.0%)	395.9	(12.7%)
Vermont	296.2	372.1	(25.6%)	398.5	(7.1%)

TABLE 2.

CANCER OF THE BREAST.

GREENOUGH AND SIMMONS.

	No. cases	Alive 5 yrs.	Percentages
1. Early favorable	14	10	71
2. Favorable	26	9	33
3. Average	29	3	10
4. Advanced (Palliation)	17	1	5
5. Hopeless (No operation)	9	0	0
Total	95	23	24.2

TABLE 3.

CANCER OF THE BREAST.

Group 1. Not X-rayed after operation.
Group 2. Scar X-rayed lightly.
Group 3. Intensively X-rayed after operation.

Ticky in Marburg.	Group 1 (1904-1914)	Group 2 (1914-1917)	Group 3 (1918-1919)
Total number	62	61	11
Recurrence within 1 yr.	7(11.2%)	23(37.7%)	5(45.5%)
Metastasis developed	3(4.8%)	7(12.1%)	
Recurrence within 1 yr.	20(32.2%)	37(60.6%)	2(18%)
Free of recurrence after 3 yrs.	24(38.7%)	23(37.7%)	
Free of recurrence after 5 yrs.	13(20%)	19(31.8%)	
Perthes in Tübingen.	**Group 1 (1910-1912)**	**Group 2 (1913-1916)**	**Group 3 (1916-1918)**
Total number	130	144	72
Recurrences within 1 yr.	37(28.0%)	55(38.2%)	30(41.0%)
Recurrence within 3 yrs.	62(47.5%)	78(54.2%)	
Metastases without local recurrence	14(11.0%)	18(12.6%)	13(18.0%)
Free from recurrence after 3 yrs.	50(38.5%)	44(30.5%)	Multiplicity
Free from recurrence after 5 yrs.	36(27.7%)	5(20.3%)	of internal metastases very
Free from recurrence after 6 yrs.	32(24.6%)	5(20.3%)	marked.
Kastner in Leipzig. (Payr's Clinic)	**Group 1**	**Group 2**	**Group 3**
Total number	69	22	42
Recurrence within 1 yr.	33%	36%	47.6%

Therefore Payr for the time being dispensed with the X-ray.

TABLE 4.

CANCER OF THE STOMACH.

DAVID CHEEVER REPORTS AS FOLLOWS:

Duration of symptoms before admission of 220 cases.

Less than 2 weeks	2	0.9 per cent
2 weeks to 1 mo.	5	2.3 " "
1 to 2 mos.	24	10.9 " "
2 to 4 mos.	52	23.6 " "
4 to 6 mos.	28	12.6 " "
6 to 12 mos.	65	29.5 " "
12 to 18 mos.	12	5.5 " "
18 to 24 mos.	21	9.5 " "
2 to 2½ yrs.	4	1.8 " "
2½ to 3 yrs.	5	2.3 " "
More than 3 yrs.	2	0.9 " "

Analysis of Operability of 236 cases.

Frankly Inoperable	124	52.5 per cent
Explored, Found Inoperable	24	10.1 " "
Palliative Operation	53	22.4 " "
Radical Operation	23	9.7 " "
Operation Refused	12	5.0 " "

Of the 23 cases of Radical Operation, 3 were alive 5 years after the operation. This would be 13 per cent. of the radically operated cases, or 1.3 per cent. of all cases seen.

CONTROL OF DIPHTHERIA*

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Introductory. I shall not attempt at this time to add anything new to the vast amount of information already available on the control of diphtheria.

I will confine my remarks chiefly to a consideration of practical methods of procedure from the standpoint of the public health officer; stating a few facts, making a few deductions, and expressing a few opinions.

Factors of Control. The control of any communicable disease depends in general upon four prime factors: (a) the isolation or identification of the causative agent, (b) a knowledge of its distribution among individuals, (c) an appreciation of the avenues of transmission, and (d) an understanding of the fate of the virus outside of the human body.

Causative Organism. With the discovery of the bacillus by Klebs in 1883 and its culture by Loeffler in 1884, the etiology of diphtheria was established.

In subsequent years, there has been no rea-

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son to doubt that the Klebs-Loeffler bacillus is the causative organism of this disease.

In fact, the organism has met all the requirements of Koch's postulates as to etiological relationship.

Distribution. The distribution of the organism among the human individuals who constitute the sources of infection includes:

(a) The frank clinical case, (b) the atypical or missed case, and (c) the healthy carrier.

Among animals, the cat has been regarded as a possible carrier of the diphtheria bacillus, but there is no conclusive evidence on this point.

Recently Perkins and Shen[1] made a bacteriological examination of the noses and throats of 22 cats in connection with their work on the bacillus lactimorbi, which resembles the diphtheria bacillus in appearance and is sometimes confused with it when found in human throats. In 7 of the 22 animals, the bacillus lactimorbi was found; indicating that in cats as well as in humans this organism may be mistaken for the diphtheria bacillus, and a wrong diagnosis of diphtheria or a carrier state made.

Incidence. The general incidence of diphtheria has not decreased in recent years, in spite of isolation and antitoxin.

The U. S. Public Health Service figures show an increase for the registration area during 1921, as compared with the median number of cases reported during several preceding years. This, of course, may mean an actual increased incidence, or a more complete reporting by physicians, or an increased use of the laboratory for diagnosis.

The age distribution of the disease is very striking. Eighty per cent of all the cases occur before the fifth year. It is therefore quite obvious that, from this standpoint, the control of diphtheria is essentially a preschool problem.

The comparatively easy diagnosis of the frank clinical case greatly facilitates the handling of this source of infection.

Atypical or Missed Cases. The atypical or missed case is the greater problem of the health officer today, because of the fact that these individuals are overlooked, and therefore do not come under his surveillance. In fact, this type of case is probably a greater menace than that which is properly diagnosed and adequately supervised.

In the medical inspection of school children, I have found in the classroom cases of diphtheria with bloody nasal discharge, which presented no pharyngeal symptoms and only slight constitutional disturbances.

Furthermore, we do not know how many sore throats without membrane are diphtheria.

I once saw a child separated from a perfectly normal appendix; when a casual examination of his throat would have revealed a well developed membrane.

Too much reliance must not be placed upon the report of the laboratory findings. In some cases, cultures taken in the customarily superficial way are negative, when diphtheria bacilli are present in the throat. A culture from *under* the membrane will often reveal the true diagnosis, when superficial cultures are negative.

The missed case is frequently due to a failure to read the clinical picture and a shifting of the burden of diagnosis upon the laboratory.

More careful investigation and more accurate diagnosis will materially decrease the dangers of this source of infection.

Carriers. As the discovery of pathogenic organisms marked an epoch in the development of curative medicine, so the recognition of carriers profoundly influenced procedure in the preventive field.

And at the same time, it added an embarrassing factor to the health officer's problem of supervision of infective sources. For it is extremely difficult to regulate the habits of a healthy individual who presents no symptoms of a communicable disease and yet is a menace to the public health.

McGuire and Hitchens[2] recently published some very interesting data on the prevalence of diphtheria carriers among the admissions to a citizens' military training camp. Cultures from the throats of 1,080 healthy young men between the ages of 17 and 21 showed that nearly 1 per cent of them carried virulent diphtheria bacilli. Among 833 of these men, 55 per cent gave a positive Schick, indicating an absence of antitoxic immunity. And yet, in spite of the close association of carriers and susceptibles, not a single case of clinical diphtheria developed during the four weeks' training period.

As early as 1894, Park and Beebe[3] demonstrated the fact that among 330 healthy persons in New York City, none of whom were known to have been in contact with diphtheria, more

than 2 per cent had virulent diphtheria bacilli in their throats.

Many observers have noted that from 1 to 2 per cent of healthy school children show the presence of virulent diphtheria bacilli in their throats, whenever the cultures may be taken.

Park[4] makes the statement that many convalescent cases remain carriers for an indefinite period of days or weeks, and that persons in contact with them frequently become carriers without developing the slightest disease, and that these contacts in turn infect a third group who may become carriers or true cases.

In view of these facts, it is quite evident that the detection and control of healthy diphtheria carriers on any extensive scale, for the purpose of clearing masses of people from infection, offers practically insurmountable obstacles at the present time. Even in institutions, schools and families, the handling of carriers is very difficult, and not always successful.

Mode of Transmission. In former days, there used to be a distinction drawn between an "infectious" and a "contagious" disease. Today, we call such diseases "communicable," and consider this to be the better term.

Diphtheria is a communicable disease because it may be transmitted, directly or indirectly, by contact with the infective organism. The mode of transmission is directly by personal contact; and indirectly by articles freshly soiled with discharges, or through infected milk or milk products. The transmitting media are the discharges from the diphtheritic lesions of the nose, throat, conjunctiva, vagina, and wound surfaces; and the secretions from the nose and throats of the bacillus carriers.

The suppressive measures of today are designed chiefly to confine the infecting organism to the case, by preventing the dissemination of fresh body discharges. In other words, emphasis is laid upon "technical" isolation rather than physical isolation. The aerial transmission of infection is practically ignored, and the whole attention is centered upon surgical cleanliness. This is the fundamental principle of the "aseptic nursing" of communicable diseases introduced in the Providence City Hospital by Chapin in 1910; which has met with remarkable success, and has revolutionized our procedure in the hospital care of such cases.

Richardson states[5] that during nine years, up to January, 1919, 11,074 cases of various communicable diseases were admitted to the Providence City Hospital; and that only 234 cases of cross-infection occurred—a rate of 2.1 per cent. Two-thirds of these cross-infections were due to chickenpox and measles. With more than 2,500 cases of diphtheria admitted, only 10 cross-infections of this disease occurred—a rate of 0.4 per cent. All the cases were treated in the same building or in the same ward, and the infection was confined to the individual room or to the individual bed.

Several other hospitals in the country have duplicated these results[5]. And with proper nursing technique, the same procedure can be carried out successfully in the home.

A study of the figures, however, shows that the isolation of diphtheria, both in the home and the hospital, has not accomplished the desired reduction of its prevalence. This is due to a failure to detect and to control all the sources of infection.

The question of milk supply is of great importance in the control of diphtheria, for it furnishes an excellent medium of transmission. The first epidemic of diphtheria traced to milk was reported by Jacob in 1877, and occurred in England. Since that time, according to a partial list by North[6], at least 55 milk borne epidemics of diphtheria had occurred up to the year 1920.

Graham and Golaz[7] quite recently reported such an epidemic in Texas, resulting from the infection of a milk supply by a milker who carried the virulent diphtheria bacilli in his nose.

Fate of Organism. A proper understanding of the fate of the organism outside of the human body is of prime importance in developing a rational system of communicable disease control.

In the past, too much emphasis has been placed upon environment, and not enough attention directed upon the individual, the real source of infection. It is true, we recognize the fact that in some instances infection is spread through an intermediary host in the animal or insect species. Likewise, we appreciate the fact that, under favorable conditions, human organisms may thrive in such media as milk and water, and become a real menace to the consumer of these products. On the other hand, recent investigations have demonstrated quite clearly that human organisms are very fragile and rather

promptly die or lose their virulence outside the human body, especially under conditions of drying and sunlight. It is on this basis that the contact diseases are handled today.

Methods of Procedure. Having thus far discussed the factors involved in the control of diphtheria, let us consider the practical methods of procedure. In this connection, we shall include diagnosis, isolation of the case, antitoxin administration, the Schick test, and toxin-antitoxin immunization.

Diagnosis. The diagnosis of diphtheria rests upon the clinical picture and the laboratory findings. The clinical picture is sometimes confused with catarrhal or follicular tonsilitis, or Vincent's angina, or an atypical form of the disease itself. Michie[3], in his handling of American troops in Germany, resorted to the Schick test as a means of differentiation; only the true diphtherias giving a positive Schick reaction, even when the case showed a carrier state by the presence of diphtheria bacilli in the throat. Laboratory findings are often nullified by faulty technique in obtaining the culture; sometimes it is necessary to dig in, in order to get the organism. A negative culture does not always mean absence of diphtheria; nor does a positive culture always mean presence of diphtheria. There is danger in relying too much upon the laboratory report. A common error is the failure to get a culture from the nose.

Isolation. With a diagnosis established, the next step is the isolation of the case. A prompt report by the attending physician serves materially to reduce the number of exposures and possible secondary cases. Failure to do this may mean an epidemic. Under competent health supervision, individuals in a quarantined home who yield negative cultures may continue their activities. The release of wage earners is of economic importance. A virulence test is sometimes necessary for the release of a carrier. It is often of advantage to hospitalize the case. By aseptic nursing, diphtheria may be safely handled in a general hospital or in any institution housing many individuals, so long as the technical isolation of the case is carefully observed. Concurrent disinfection of the body discharges is the great factor here. By the time the patient is innocuous his environment is safe, excepting the few objects which may have been directly soiled by the secretions; and soap and water will take care of most of these. Fumigation is unnecessary; for it has been amply demonstrated that it is of no practical value in controlling contact diseases. Richardson[9] says that in contact diseases the whole room occupied by the patient is not contaminated and fumigation serves no other purpose than to appease the conscience of hospital authorities, health officers and the public.

Antitoxin. The introduction of antitoxin in the treatment of diphtheria produced a tremendous reduction in the mortality rate. Of 183,000 cases in 150 cities previous to its use, the mortality was 38 per cent; among 132,000 cases after its introduction, the mortality was 14 per cent. By the use of antitoxin, the mortality rate in Illinois during the past four years has dropped from 13 per hundred to 6 per hundred of reported cases. And this figure can be still further reduced by a more general use of antitoxin, promptly administered and in sufficient quantity. The time element is all important. No amount of antitoxin can compensate for delayed administration. To wait for the laboratory report, may mean a fatality—has meant a fatality in many a case.

Schick offers the following suggestions regarding the administration of antitoxin: (a) for mild and medium cases, 100 units per kilo of body weight, (b) for severe cases, 500 units per kilo of body weight, (c) for immunization, 50 units per kilo of body weight, (d) repeated injections should be omitted as superfluous, (e) slight improvement in curative results may be obtained by intravenous injection.

Given the primary case, the prompt immunization of all contacts should never be omitted. In hospitals, and other institutions, it falls upon the health officer to determine what indviduals shall be considered contacts.

The occasional untoward results of antitoxin administration offers no justification for neglecting its use.

The immunity conferred by antitoxin is brief because it is rapidly eliminated from the human body. According to Park[4], a thousand units injected at the time of exposure will give absolute protection to all persons for ten days and to most persons for three weeks. Each repeti-

tion of the injection gives an added period of safety of about one week.

Schick Test. Experience has definitely shown that only those individuals contract diphtheria who have no antitoxin, or only a minute amount of it, in their blood and tissues. In 1913, Schick published a description of a simple clinical test by which the amount of antitoxin present can be accurately demonstrated. The reaction depends upon the local irritant action of a minute quantity of diphtheria toxin injected intracutaneously. If the individual has no antitoxin, or not enough to protect against diphtheria, a positive reaction will appear in from twenty-four to forty-eight hours. If the individual possesses antitoxin, and is immune to diphtheria, a negative action results.

This test has proved to be thoroughly reliable, and exceedingly valuable in determining susceptibility to diphtheria. Without quoting too many figures, the percentage of individuals susceptible to diphtheria is shown by this test to be greatest between the ages of one and two years (75 per cent); and least in adults and infants under six months (roughly 20 per cent). The mortality rates show an interesting comparison in this respect[4].

The practical application of this test is especially valuable in the control of admissions to children's hospitals, state schools, and other institutions of similar character.

I will not attempt at this time to discuss the details of the technique, nor the interpretation of the reaction.

Toxin-Antitoxin. In 1913, Behring published the results of his attempts to immunize human beings against diphtheria with neutralized toxin. Park immediately began to use it; and by an immense amount of work has already demonstrated its practical value. May I quote, in part, the summary and conclusions of his article on this subject recently published[11]:

Three injections, 1 c.c. each, of a suitable toxin-antitoxin mixture spaced one or two weeks apart, will cause about 85 per cent. of susceptible children or older persons to develop sufficient antitoxin to give the negative Schick reaction and produce marked, if not absolute, protection against diphtheria.

The development of the immunity is slow. An amount of antitoxin sufficient to prevent the positive Schick reaction develops in the different children in from one to six months after the receiving of the injection. Antitoxin as heretofore must continue to be used to produce immediate immunity.

The duration of the immunity in at least 90 per cent. of the children is for more than six years and probably for the remainder of life.

A toxin-antitoxin mixture of stabilized materials which is safe when it leaves the laboratory cannot become more toxic on being kept. No serious effects have ever resulted from the injections given to the tens of thousands of the New York children since we began our work, seven years ago.

The Schick test is an extremely reliable means of separating those individuals who have antitoxic immunity from those that have none. Although a simple test, it must be carried out with extreme care.

In practical school work, the first Schick test is frequently omitted in children up to the age of six because it is easier to inject the children at once rather than to delay for the test. At this age the percentage of children requiring immunization is still high, and the annoyance from the injections is slight. The omission of the preliminary Schick test facilitates the introduction of the immunizing injections in the schools. Above the age of six years, the preliminary Schick test should be made whenever practicable.

No child should be pronounced immune from diphteria because of having received three immunizing injections of toxin-antitoxin. A negative Schick test is absolutely necessary before one can properly make such a statement or issue a certificate.

The toxin-antitoxin injections are inadvisable before the age of six months. During this time most of the infants retain the antitoxin received from their mothers. Under usual conditions, it is probably safe to wait until the infant is nine months old and then to give the injections at the first suitable occasion. During the first three years there is almost no annoyance from the injections. As the child grows older, the danger from diphtheria gradually lessens, and the percentage of those developing annoying local and constitutional reactions slowly increases.

There appears to be no difference in the degree of immunity between those individuals who have developed antitoxin from natural causes and those who did so because of the stimulus of the toxin-antitoxin injections.

Institutions in which the children have been given the immunizing injections have been remarkably free from diphtheria.

Conclusion. In concluding this paper, may I express the opinion that toxin-antitoxin immunization is the real solution to the problem of diphtheria control.

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DISCUSSION

DR. C. A. EARLE, DesPlaines, Ill.: I have done the medical work for upwards of 30 years for a large orphanage numbering now 1,200 children. Five years ago we had 85 cases of diphtheria with 7 deaths. Immediately after this epidemic I began Schick testing and immunization with T. A. mixtures. Since that time we have not lost a child with diphtheria.

During the past three months we have had a small epidemic. It has been exceedingly interesting to me to study the incidence of diphtheria in this school with reference to the accuracy of the Schick test and the effect of T. A. mixtures, if not absolutely preventing diphtheria, at least preventing death. During this epidemic I tested 462 children. Of the 462 children, 428 were Schick negative. Among the 428 only *one* developed a throat lesion that could possibly be diphtheria. The remaining 34 were Schick positive. Of these 34 who gave a positive Schick reaction, 17 or 50 per cent. developed diphtheria. To state it more graphically, the chance that a Schick positive child would get diphtheria in this institution was 250 times that of a Schick negative child. The lesson this teaches is to make all children Schick negative. To be Schick negative is practically to be immune to diphtheria.

Of the 18 cases of diphtheria 5 never had received T. A. One case developed in a child 8 months after three T. A. injections. All the other cases developed less than 5 months after receiving T. A. injections.

In my experience three doses of T. A. will immunize 85 per cent. of susceptible children. The persistent use of T. A. will ultimately immunize all. I have given several children three rounds of T. A., that is nine doses, before getting the desired effect.

As far as my experience goes, the administration of T. A. to children is devoid of danger. Only three small abscesses developed in about 4,000 injections. Dr. Brokaw deserves the approbation of this Section for again reminding the profession of what is perhaps the most recent potential disease preventive procedure we have.

DR. JOHN DILL ROBERTSON, Chicago: I rise to say I have listened to a great many medical papers in my life and in my judgment this paper of Dr. Brokaw's is correct to the minutest detail. As he read the paper I have listened carefully for some flaw in it, and I am unable to point out any. It is a wonderful paper, correct in every detail, even when he says there is no use of fumigating.

At the same time, as Health Commissioner of Chicago I spent $20,000 to $25,000 each year for fumigating. The only excuse I had for fumigating was to make the householder scrub, clean and air the building. I do not know any other way to get quick cleaning and airing of the homes where there have been contagious sick, other than to say to them, "We cannot fumigate until you clean." In other words, this is a means to an end.

I tried to sell Toxin-Antitoxin to the people of Chicago. I posted the sign in every street car and kept it there three months. We have 3,300 service cars and half again as many elevated cars. These signs always contained the words: "Consult your family doctor." We told them about T. A. Just a few words, and they get it. When they went to the family doctor with this message, frequently he said, "I do not know anything about it—it is new stuff and I do not dare try it." We found that would not go. We then started over again with the Chicago Medical Society. They brought Dr. Zingher of New York on to Chicago, and later Schick, the originator of the Schick test, appeared before our Medical Society and discussed the problem. Up to the present time a vast majority of our physicians have not given it any serious consideration. It will probably take some years to popularize this remedy with the general practitioner.

As you know, a great many physicians do their own appendectomies and many other major operations. Why do an appendectomy on a few people and overlook entirely thousands of children between the ages of 9 months and 6 years, who, under the simple process of the T-A vaccination, will be prevented from having diphtheria. There are six times as many children die every year from diphtheria as there are people killed in automobile accidents. Just six times as many. And that could all be prevented if the 120,000 practicing physicians in America were alive to the saving grace of T-A, as are Dr. Earle and Dr. Brokaw. Dr. Earle makes regular charges for his services and derives a considerable income from this beneficent prevention work.

Many physicians object to the health officer interviewing and advising their patients in regard to preventive medicine. This would not be necessary if the general practitioner would embrace such practices as are presented by Dr. Schick, and administer T-A. Millions of dollars worth of children's lives could be saved, and incidentally millions of dollars earned by the general practitioner in saving them.

Yes, if I were health officer in Chicago at the present time I would continue to fumigate. Let me make this very plain. First, I am taking the same position now as before. Second, in order to insure early cleaning of the premises, when the householder asks us, "when are you going to fumigate?" we tell him, "when you have thoroughly cleaned up." We hold out fumigation to them when they have thoroughly cleaned up, and say to them, "nobody comes into this house until you have done so."

I expended nearly $200,000 in trying to isolate diphtheria carriers. We excluded these carriers from the schools in such large numbers that we nearly broke up the schools. We had to stop that so we confined the exclusions to those that showed virulency, but we

found only two out of every 100 of these carriers that were virulent. The time we took to get the swabs and make laboratory examinations to detect the 100 and then to detect the 2 per cent. of virulence, made so much work that it had to be abandoned because it was impracticable.

There is only one practical way to prevent diphtheria, and that is through the use of Toxin-Antitoxin, and this should not be the health officer's problem at all. Every practitioner in this country should be on this job, and every doctor in this state ought to have heard Dr. Brokaw's paper today. He has pointed out the only way to solve the diphtheria problem. If you are not going to believe men like Theobald Smith, Schick, Parke, Earle and Brokaw, whom will you believe?

Dr. E. W. Weiss, LaSalle: Scientifically, fumigation is nil. As a matter of fact, it does harm. It places the people under a false sense of security which is not there. We hear people today—are you going to fumigate, when are you going to fumigate our house, when will you raise the quarantine, and so on. There is where it plays the mischief. Fresh air, disinfection, clean up the clothes, is all that is necessary and it don't cost any $40,000 or $50,000 a year, not by a good deal. There are several points in the Doctor's paper that I think need a little emphasis, and that is in the treatment of a carrier. If is were not for the carrie. we wouldn't have much diphtheria. My experiences in going through the schoolrooms after we had developed case all showed up a carrier, 2, 3 or 4 as the case may be, and the care of those was sufficient to eliminate an epidemic. The smallest carrier, the youngest rather that we had, was a little baby of six weeks. This little one did not have diphtheria, had the sniffles; we took a smear and to our astonishment found Klebs-Loeffler. You all know how hard it is to get rid of the bacilli in the carriers. These people are perfectly well. They never have the disease. We have tried everything, silver in all its forms, silvol and argyrol, never made any impression until one day I told one of our doctors to use iodine. To our astonishment we got results in a few days. Some used the watery solution, take the normal tincture, dilute with water so as not to irritate too much; in others we used a stronger solution.

Dr. I. D. Rawlings, Springfield: The triennial report of the last three years of Dr. Robertson's administration in Chicago came to my desk recently. I noted they have been giving toxin-antitoxin during that time to all children where parents signed consent cards. In 1921 over 13,000 children were immunized and they reported no ill results during the entire three years.

I was very glad Dr. Robertson spoke a second time, because I had a very distinct recollection of the change of policy in Chicago regarding the plan of disinfection. We used to fumigate houses and raise a big stink. Under his administration this was changed but not abolished entirely. People were told the Department would not remove the sign until they washed, aired and cleaned up the premises. The amount of cleansing necessary was usually one or two rooms and the bathroom that was used by the patient and attendant. I think we are all agreed that fumigation is always wasted effort except that it causes them to air out thoroughly.

Dr. C. S. Skaggs, E. St. Louis: I wanted just a word from the standpoint of private work. In the past five years I rather considered it a reflection on myself to have a case of diphtheria in my own family. I speak this word just to show what we can do in private work. Three years ago I started an educational program among my own people. For the past three years I have not had a single case of diphtheria in families where I have supervised their health myself. I think if it could be carried out by one man it can be carried out by all.

Dr. Brokaw, Jacksonville (closing discussion): I greatly appreciate the kindly comments on the paper. I am delighted to hear Doctor Earle's corroboration of the facts presented relative to the Schick test and toxin-antitoxin immunization.

THE GENERAL ROLE OF X-RAYS IN THE TREATMENT OF BENIGN AND MALIGNANT TUMORS OF THE UTERUS.*

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Our present knowledge of the physical laws in accordance with which the x-rays operate demonstrates that until recently but few deeply situated malignant lesions ever received a therapeutic dose. The successful clinical application of x-rays and radium rays depends upon a thorough understanding of the physical laws governing the action of these two valuable agents. The rays emitted from radium and x-ray obey the same laws of physics. For all practical purposes therefore the rays may be considered as identical.

About two years ago we began the investigation of deep x-ray therapy. In collaboration with our Department of Biophysics an especial study of the intensities of x-rays was made, and our findings were compared with results already published. We were disappointed to find that the very great dosages anticipated were not obtainable under practical working conditions. As a result of our investigations we came to the conclusion that in most cases a therapeutic dose of radiation could not be safely administered to

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the most deeply situated malignant tumors by x-ray alone.

The favorable results of radium therapy and this knowledge of the limitations of the x-ray lead us to adopt a plan for the establishment of "a radiation therapeutic dose" by means of the combination of these two similar agents. This is accomplished by individualizing the patient by drawing on paper an exact cross section of the body at the site of the lesion, and indicating thereon the involved areas and organs. Our own charts which show the rate of absorption of x-rays or equal intensity curves are superimposed on the cross section at suitable portals of entry so that the sum of the intensities of the x-rays which reach any point from the various portals may be calculated. A standard chart showing the sphere of radium activity is then superimposed at the point of radium application and the combined radiation from the x-rays and the radium can be computed for any point in the cross section. By this method we are able to estimate and tabulate the exact dosage of radiation administered in any case.

Biological reactions: The biological effects of radium and of the x-rays are practically identical. Microscopical examination of tissues after destructive or therapeutic doses of either shows no distinguishable difference.

In general, the different types of cells apparently react differently to radiation and under similar conditions cells of the same morphology may vary in their susceptibility. As a rule neoplastic cells which are undergoing rapid mitosis are most susceptible while those which are most nearly like those of normal tissue are most resistant. After a destructive or therapeutic dose of radiation the cells undergo a process of nuclear hyper-chromatization, fragmentation and vacuolization which leads to eventual necrosis and repair by absorption and fibrosis.

Among the normal tissues the endothelial cells of the lymphatics and blood vessels are most susceptible to radiation. The swelling and necrosis of these cells produce an obliteration of the vessel channels which in turn cuts off the nutrition of the surrounding tissues. We believe that this result explains in part the favorable consequences of radiation. It is possible, however, that this effect is secondary and that the primary therapeutic action is directly upon the tumor cells.

Since it is found that cells vary in their reactions to radiation it is necessary to consider separately the treatment of benign and malignant growths. It is obvious that the basis for the successful radiation treatment of tumors depends upon accuracy of diagnosis. In this symposium, therefore, we shall consider separately the application of radiation to fibromyomata and to carcinoma.

Fibromyomata: Chronic metritis and fibromyomata react very favorably to proper administration of radiation in properly selected cases. Until recently the results of radiation in these cases have varied considerably but since we now have accurate methods of measurement and a basis for the selection of cases we may anticipate more uniformity of results.

The selection of cases depends upon certain well defined conditions:

1. *The age of the patient*: No woman under 40 years of age should be subjected to radiation, as it tends to advance the menopause, although in certain cases there may be justifiable reasons for disregarding this precaution.

2. *Complications*: Certain coincident conditions may require special consideration:

(a) *Inflammation*: Intensive radiation in the presence of chronic or acute inflammations or any evidence of inflammation within the pelvis is hazardous.

(b) *Evidence of degeneration*: Irregularity of the menses or the character of the bleeding may indicate a malignant or inflammatory degeneration of the uterus or of the tumor which would require a different method of treatment.

3. *Size and form*: A tumor of any size may be reduced by radiation but those tumors that extend as high as the umbilicus may regress too slowly to relieve the rather distressing pressure symptoms. Pedunculated and sub-serous fibroids obviously demand surgical treatment.

4. *Pregnancy* contraindicates radiation, as abortion will probably be induced and it has been demonstrated that radiation may produce a monstrosity of the fetus.

After eliminating the groups of cases indicated above as unsuitable for radiation there remain about 30 per cent. of all cases of fibro-

myomata that may be safely treated by radiation. Relief of symptoms may be anticipated in 99 per cent. of properly selected cases, the percentage of complete cures averaging about 87 per cent.

Mode of action: There have been two theories regarding the action of radiation on fibroid tumors of the uterus—some believing that the primary action is upon the ovaries and others that the tumor cells themselves are immediately affected. The former group attempted to radiate only the ovaries while the latter directed the radiation to the tumor. Neither group has taken into consideration the endometrium. As a matter of fact, it is physically impossible to radiate either the ovaries or the uterus alone. We feel that favorable reactions are due to three causes—first, the inhibition or destruction of the graafian follicles and fibrosis of the interstitial tissue of the ovaries; second, direct action upon the tumor cells; and, third, changes of the endometrium by the action of the radiation upon the end arteries and lymphatics—the uterine membrane. So far as I can determine this last cited point has usually been overlooked.

1. The action upon the *ovaries* causes complete amenorrhea or reduces the frequency and severity of hemorrhage. The initial effect frequently is stimulation and the menstruation following radiation may be more severe than at any previous time. If the graafian follicles are not all destroyed normal menstruation may reappear after varying periods of amenorrhea and normal pregnancy may occur. In almost 99 per cent. of the cases menorrhagia will eventually be favorably influenced and controlled.

2. The *tumor cells* undergo a slow necrosis and absorption which may be due either to direct action upon the cells or to the destruction of nutrition by a blocking of the blood and lymph vessels. The end result is slow regression of the tumor which begins almost at once and extends over a period of from three to eight months. Obviously, the period of regression is in direct relation to the size of the tumor.

The immediate effect of x-ray radiation is a short period of nausea and malaise, especially if the dose is large. The skin may show erythema. Large doses may cause a diarrhea lasting for a few days.

The choice between radium and the x-rays in the treatment of fibroid tumors may depend upon the availability of either or the economic status of the patient. In properly selected cases favorable results may be anticipated from each agent. Either x-ray or radium will eventually control hemorrhage, but the effect of radium is more quickly manifested in cases of severe bleeding because of its immediate action upon the endometrium; therefore, when the control of hemorrhage is urgently indicated, radium is the agent of choice. Although, as we have stated, the biological effects of radium and of x-ray are practically identical, x-ray will produce a more rapid regression of tumors and for this reason x-ray in comparatively large doses is to be preferred for the treatment of the larger tumors.

The economic status of patients must be considered in the choice of treatment, for radium therapy requires hospitalization, anesthetic and intra-uterine manipulation, while x-ray may be administered in divided doses without hospitalization. The menopause is brought about more slowly by x-ray than by radium so that by the use of the former the patient may become adjusted to the new condition very gradually. In skilled hands the danger from x-ray therapy is negligible.

Carcinoma of the fundus: As yet there is no sufficient basis for the substitution of radiation for surgery in the treatment of carcinoma of the fundus, for although as yet there are no reliable statistics upon the results of treatment of corpus carcinoma by radiation alone, it is highly improbable that radiologists can improve upon the results obtained by surgeons. However, from the standpoint of physics it is as easy to administer a dose of radiation to the fundus as to the cervix.

Carcinoma of the cervix: In considering the results of treatment of carcinoma of the cervix it should be borne in mind that, prior to the last three or four years, in all probability no such lesion received what we now consider to be a therapeutic dose of x-ray radiation. This is indicated by the fact that no better results were obtained by the combination of surgery and x-ray therapy than by operation alone. During the last ten years, however, the favorable results obtained by radium has limited the operation for carcinoma of the cervix to early cases. But the favorable results of radium therapy or operation depend upon the extent of the malig-

nant involvement, for although a therapeutic dose of radium radiation can be administered to areas beyond the reach of the knife or cautery, yet there remains a large group of cases in which the involvement is beyond the reach of either. Moreover, in any given case it is impossible to determine the exact extent of the carcinomatous involvement. These limitations of surgery and of radium demand the addition of the recently developed deep x-ray therapy in the treatment of carcinoma of the cervix.

We believe that the proper treatment of malignant disease must include surgery, radium and x-ray in such combination as is indicated by the individual case. In the treatment of carcinoma of the cervix, at present we believe that the combination of radium and x-ray radiation is the therapeutic method of choice. The uterus is the easiest organ to radiate, being centrally located in the pelvis so that an inclusive irradiation can be secured by the local application of radium in the cervix and by the application of x-ray through a number of portals about the body By this combination we can secure a homogeneous radiation of the entire pelvis and its gland bearing areas with a large dose at the site of the primary lesion.

Not sufficient time has elapsed to permit us to draw conclusions in regard to the end results of deep x-ray therapy as applied to carcinoma of the cervix. Our own experience thus far leads us to believe that the patients treated by the combination of deep x-ray and radium therapy have been benefited more than those treated by surgery alone or by surgery and radium. Thus far we have refused no case. It is obvious, however, that in very late cases but little or no benefit may be expected. In the cases thus far treated we have observed an immediate cessation of hemorrhage and of pain and a more rapid healing of local lesions, an early softening and disappearance of induration and a more rapid convalescence than by any other method. The improvement has been most striking in the inoperable cases with rather extensive involvement.

The cases which have received least benefit have been recurrences following other forms of treatment. Curettement or biopsy for diagnosis should be immediately followed by radiation.

The contra-indications to radiation in cases of carcinoma of the cervix are: (1) The presence of tubal infections; (2) The presence of far advanced disease; (3) A poor general physical condition, though these cases may be made radiable by blood transfusions. Secondary anemia or loss of blood is not essentially a contra-indication as radiation shortens the coagulation time of blood and transfusion is a simple surgical procedure.

The sequelae of radiation as described are not severe if the entire treatment is given in divided doses.

CONCLUSION

1. In properly selected cases of benign tumors of the uterus—i. e., women over 40 years of age without excessive bleeding, evidence of degeneration or inflammation—deep x-ray therapy alone is the method of choice. When menorrhagia must be checked at once, radium is preferred. All other cases are surgical.

2. In the treatment of carcinoma of the fundus, there is no present indication that radiation is to be preferred to surgery.

3. In the treatment of carcinoma of the cervix the combination of radium and deep x-ray therapy is the method of choice.

4. In general, in the treatment of malignant or of benign tumors, surgery, the x-rays and radium, should be used in such combination as is indicated by the conditions present in the individual cases.

DUODENAL ULCER AND ASSOCIATED CONDITIONS*

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During all these years of the development of differential diagnosis duodenal ulcer has been considered a disease *per se*. No attempt has been made to group or generalize conditions in regard to their pathogenesis. Duodenal ulcer has been one of those conditions. When we go back into the earlier years in the diagnosis of abdominal conditions they spoke of any disturbance in the right upper quadrant of the abdomen in terms of one of the many different pathological conditions which might be present. They considered gall bladder with all of its various abnormal conditions or gastric ulcer or duodenal

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ulcer or disease of the pancreas, or disease of the ascending colon especially the hepatic flexture or disease of the right kidney. Each one was spoken of separately without any regard to their continuity, or juxtaposition, little attention was paid to the progression of diseases or one might say to its natural development. When one spoke of ulcer it was either gastric or duodenal or else pyloric. We considered gall bladder disease as cholecystitis or gall stones; empyema of gall bladder being diagnosed if there was a marked elevation in temperature. Now we realize that seldom is one only pathological condition present.

Having learned that cholecystotomy often relieves and gives apparent cure for acute pancreatitis, the belief arose that infection of the head of the pancreas was the result of extension of infection from the bile ducts up the pancreatic ducts. Later mention has frequently been made of the simultaneous occurrence of chronic cholecystitis and chronic appendicitis. Co-existing duodenal ulcer and cholecystitis have very often been seen upon the operating room table. About 1909, Dr. E. P. Sloan observed bands of adhesions running from the doudenum to the meso-colon causing a kink at the duodeno-jejunal angle in a patient in whom both of these conditions existed. The general condition of the patient would not permit the completion of the operation. After he separated the most noticeable bands the abdomen was closed, the patient recovered and apparently had no further gastric symptoms except the extensive belching and the hyperacidity due to the gall bladder which was observed to be full of stones at the previous incomplete operation. Two years later this patient was again operated on, but no evidence of duodenal ulcer could be found. The gall bladder was drained and the patient has remained well to this day.

Several years ago I began the intensive study of conditions of the right upper abdomen. Included in this group of cases were a large number who have had prolonged medical treatment at clinics elsewhere without relief or only partial relief and the symptoms were only those of ulcer.

By means of the fluoroscope I was able to detect not only the ordinary adhesions between the pylorus and gall bladder, but what seemed to be partial obstruction across the duodenum. The most noticeable of which were in the duodenal jejunal junction area. Just proximal to this point we would often observe an enlargement of the duodenum. We would watch this process until after the stomach emptied and we would then see a case of reverse peristalsis in the duodenum. Some of the barium remaining in this portion of the duodenum for an hour after the stomach emptied going back and forth sometimes even passing back into the stomach and again through the pylorus. A little over three years ago, I began the study of the duodenum by direct injection of barium and bismuth, and would then watch the duodenum empty. In the case of simple uncomplicated duodenal ulcer the fluid would pass on rapidly into the jejunum and on down.

When there were adhesions at this point reverse peristalsis usually could be demonstrated; these cases were often not complicated by gall bladder disturbance. In studying the duodenum you must use the fluoroscope fearlessly. The patient must be watched and watched carefully. The stomach must be moved at will by the diagnostician in order that the shape and the course of the duodenum may be seen. It has been my experience that the duodenum is most reliably studied following an ordinary barium meal at the time the last part of the meal is in the duodenum. We employ the other method, however, as it saves the time necessary to watch for the last portion of meal. We pay little attention to the duodenal cap, but consider the pylorus and duodenum as a whole, and from this we draw our roentgenological conclusions. Two points of tenderness are usually present, though more may be present, these two are tenderness over the ulcer itself and at a point immediately below the sternum. Tenderness may also be present in the region around any adhesions across the duodenum. Tenderness may also be present over the gall bladder and over the appendix. Pressure over any tender point almost invariably sets up a hupermotility of the stomach. We no longer consider hypermotility of the stomach as being necessary for diagnosis of duodenal ulcer, as in a great many of these cases an apparent hypomotility exists. While irritation in appendicular region or gall bladder is often accompanied with hyper-motility.

The question of hyperacidity or hypoacidity does not bear much weight with us in arriving

at a diagnosis. The acid curve by means of the fractional test meal has no diagnostic significance. None of them apparently run true to any definite pathological condition, it is only an estimate of vagus irritation. We have found that a very weak solution of atropin sulphate injected into the empty stomach influences the secretion more than anything else, corroborating in his way the work of Bennett and Dodds. We do not believe that the finding of small amounts of occult blood either in the stomach contents or in the stool has any positive clinical significance, but the finding of a large amount of blood usually means ulcer.

From a clinical standpoint we find that these patients usually will give the classical story of pain coming on 1½ to 2 hours after eating, or else the hunger pain and the relief of these pains by food, alkalies or vomiting. The gall bladder cases have much more belching, sometimes the belching takes place in paroxysms lasting for as long as 2 or 3 hours and the belching gives partial relief. Very often these patients complain of a pain in the left hypochondriac region due to the adhesions involving the duodenum and nothing seems to relieve this pain except the use of opiates. We have seen many patients who clinically appeared to have a carcinoma of the stomach. They were associated with loss of weight, pain immediately upon taking food, a hypoacidity and vomiting of food taken from twelve to twenty-four hours before. These patients generally have had more or less obstruction of the terminal duodenum, sometimes with quite an acute kink at the point where the first portion of the duodenum verges into the second portion with a high degree of pyloric spasm; sometimes a partial obstruction at the terminal portion of the duodenum. Secondary anemia seems to be very common in this type of case.

Perhaps the symptom complex that comes to us most frequently from which the wrong interpretation has been drawn, is that type of gall bladder and ulcer in which the patient complains of very little pain upon the right side or in the right hypochondriac region, but complains greatly of pain extending up over the right side of the chest, or the patient says they have pain in the heart and then they think they bloat somewhat in the left hypochondriac region. Sometimes this pain will go around to the left shoulder blade, or extend up over the chest and down to the left arm, but more frequently they will say that the pains run around under the breast. This type of patient is more apprehensive than the usual gall bladder or ulcer patient. If you question them very closely you will generally find that belching gives them partial relief. The fluoroscopic examination gives you a definite diagnosis.

The treatment of these various conditions depends entirely upon the diagnosis which may be purely medical or it may be a combination of surgical and medical or sometimes purely surgical. The simple uncomplicated duodenal ulcer will practically all of them respond to medical treatment. When there is a gall bladder involvement without adhesions and you do not think that stones are present, the ordinary modified Lainhart diet and treatment plus medical drainage of the gall bladder gives most efficient results. When adhesions between pylorus and gall bladder are present it is sometimes only necessary to surgically break up the adhesions and follow with medical treatment for the ulcer, but in our experience surgical treatment of the gall bladder itself has given the most satisfactory results. When the obstruction in the duodenum is due primarily to the ulcer either from its high inflammatory condition or from cicatrization then gastroenterostomy either with or without excision of the ulcer is indicated, unless a definite partial obstruction in the distal portion of the duodenum can be demonstrated. Then relief of this obstruction makes gastroenterostomy less indicated. Stones, of course, are always an indication to do either a cholecystotomy or a cholecystectomy, but one should always look for the presence of bands stretchnig across the duodenum.

The control of the acid condition in the stomach depends entirely upon the individual. Sometimes alkali is sufficient to overcome this and again we combine atropin lavage of the stomach with the alkali, and not unfrequently we find that dilute hydrochloric acid the best depressor of gastric secretion. The diet employed may be any of the various modified Lainhart diets, the only requirement being that it has a quick emptying time in the stomach. Contrary to the old idea that if you cared an extra gastric irritant such as the gall bladder, appendix, tubes, ovaries, that your hyperacidity or so-called "Reichmen's Disease" would be

overcome, we find that it is necessary not to neglect the actual medical or surgical treatment of ulcer when present.

CONCLUSION

1. Duodenal ulcer is usually caused by duodenal stasis from partial obstruction due to adhesive bands of malformation at the duodenojejunal junction.

2. Duodenal ulcer is usually associated with pathological conditions of the adjacent viscera.

3. Definie diagnosis of duodenal ulcer and its associated pathological conditions is possible only by careful study and roentgenological facilities.

4. Medical treatment is sufficient only in the uncomplicated ulcer.

5. The medical treatment of duodenal ulcer is as important as the surgical, and should always follow for a considerable time after surgical treatment.

DISCUSSION

Dr. George W. Parker, Peoria: I am glad to hear Dr. Deneen bring out some new phases of the subject of duodenal ulcer. This has been heretofore, especially in regard to treatment, a field which has been full of controversy. If you listen to papers in the surgical section, you think that all of these cases or most of them should be treated by surgical intervention. And if you hear a paper in the medical section, the weight of opinion is for medical treatment. I believe part of this controversy can be cleared up by more careful study of the cases at the time the diagnosis is made. The question of careful x-ray and fluoroscopic study of the duodenum is very important. A great many, I fear, attach too much importance to the study of the duodenal cap alone. If you get a cap well filled out, you say no ulcer. If you get a deformed cap, you say you have a duodenal ulcer. In broad terms, you should make a more careful study of the barium meal as it goes through the second and third portions of the duodenum and also a study as to the stasis occurring in the duodenum.

The point Dr. Deneen brought out in regard to adhesions at the duodenal-jejunal angle I think is extremely important. If you get strong adhesions at this point you have a condition sometimes similar to what you get in the stomach when you have pyloric stenosis. There is retention of the barium meal.

There is no question but that factors like this explain why medical treatment fails in a good many cases.

The doctor mentioned the point that ulcer of the duodenum is largely due to the adhesions and obstruction of the duodenum. I think it might be well to stress the importance of focal infection and the localization of infection in the duodenum as being the most active cause in these cases and that the adhesions and deformities of the duodenum are predisposing factors and not the active cause.

Dr. Edward Bowe, Jacksonville: This paper suggests the advantage of having in mind the entire pathological picture in considering the question of duodenal ulcer. In many of these cases it is of the utmost importance to determine as to whether the ulcer is a single symptom in a symptom complex due to infection in other parts of the body, or due to a localized pathological condition within the gastro-intestinal tract. Early recognition of these facts should determine the type of treatment and the prognosis.

In the paper under discussion, mention was made of adhesions, and in my opinion; where adhesions are marked and rather extensive, they are strongly suggestive of pathology beyond the ulcer.

I have now a case in hand where a patient suffering from septic sore throat, developed an endocarditis and a carditis. These within a short time were followed by duodenal ulcer. This patient suffered first from an acute infection in the throat with a secondary bacteremia, and the whole symptom complex in my pinion was due to infection.

No doubt in many gastro-intestinal conditions considered as such, the role of infection enters and many of our failures in treatment are due to failure in recognizing the full pathological picture and directing treatment along lines directed towards the basic pathology.

Dr. Sidney A. Portis, Chicago: .It is very difficult to generalize on any certain form of treatment for a duodenal ulcer. One must consider the patient as an individual. In the first place, one has to consider whether the patient has had any previous medical management and whether it is an uncomplicated ulcer. If the patient has had previous medical management, and that medical management has been accurate medical management, and the patient is not well, then one ought to seriously consider the question of surgery. If the patient has not had any treatment and there are no other complications, then the patient ought to have the benefit of a thorough course of medical management, and that implies three things. In the first place, as one of the doctors said, an accurate knowledge of the pathology existing in the patient. We hope and try to remove every possible source of infection in a patient before we put him to bed, and then we put him to bed for six weeks. Lastly, after this hospitalization, we impress upon the patient that the medical management of his ulcer may have to go on for six months, a year, or even two years, but, of course, during this time the patient is on a fairly liberal diet. He must be told that the scar is just as likely to have a re-infection as the original ulcer.

I think one of the reasons for failures in medical management has been that the patient discontinues treatment as soon as the symptoms subside after hospital management. I don't believe that ulcer can be cured in six months, or even a year, unless a careful dietary regime is followed after the patient has been hospitalized. One's judgment as to the type of treat-

ment should depend largely upon the impression gained from the x-ray observation. If one sees a filling defect of the cap, and after the cap has emptied there is a small plaque left, one must seriously consider whether or not you are dealing with a perforated ulcer or one in the act of perforating, and it is this type of patient that it is questionable whether or not to put on medical management.

In our type of medical management we put the patient to bed, we feed him rectally for one week with soda bicarbonate and tap water. We then follow this up with peptonized milk feedings, the tube being down in the jejunum, and this is continued for one week, with an addition of eggs, peptonized, and orange juice between feedings. After this we start the patient out on frozen milk feedings and gradually increase a diet so that at the end of six weeks the patient leaves the hospital on a fairly liberal diet.

It is with this type of management that we have seen our best and more lasting results.

Dr. Leon Bloch, Chicago: There are some very interesting developments in the pathology of duodenal ulcer which tend to take us back to former times when it was believed that most of the pathology was arterial in origin.

There is some work in progress now at the Michael Reese Hospital by Dr. Joseph Friedman, showing that a good many cases of duodenal ulcer are not simply one ulcer but several ulcers. We have seen patients who continually have recurrences, where one ulcer treatment will be followed by a cure and subsequently by recurrences. These cases are probably not all recurrences of the old ulcer but are ones in which new ulcers develop.

Histological examination has shown scar tissue indicating that ulcers are frequently multiple and that arterial changes consisting of sclerosis or the arterial wall are the cause.

Another point of interest, important because of increasing the difficulty in the treatment, is the presence of a very thick serosa over the duodenum. Those of you who have done surgery work or watched these cases operated upon, have no doubt seen a large number of duodenal ulcers showing a thick membrane-like serosa around the duodenum. This is probably a fibrous covering in the nature of reactive inflammation. Conditions of this sort aggravate the ulcer and inhibit the healing powers.

Many ulcers present a great thick circular defect with a big overhanging margin. These cases will never be cured by medical measures. Sooner or later stenotic signs appear and cure will not be effected except by surgical measures.

This very interesting report of Dr. Deneen is right in line with the findings of the thick membrane around the duodenum, as adhesions are not infrequent with this process. The probabilities are that ulcers occur not only in the duodenum but also in the jejunum. Quite a number will have this peritoneal thickening and adhesions and as a result, will be difficultly treated by medical measures.

Dr. Frank Smithies, Chicago: It is certainly a very encouraging condition of affairs when we have a group of men, such as now gather together, who say so little regarding treatment and so much about uncertainties of diagnosis and pathology.

What is particularly peculiar about the ulcer situation is that for the last fifty years, without any chemical or pathological backing, men have been advancing schemes of treatment similar to what they did forty years ago in, for example, typhoid fever; treating the local condition in the alimentary tract instead of treating the bacteremia. A similar situation now presents itself in regard to the medical situation of ulcer management.

It is to the surgeon who has gone ahead and taken a look that we owe our persent, though incomplete, knowledge of the pathology of peptic ulcer. It is to the bacteriologist who has worked hand in hand with the surgeon and to the histologist that we owe our knowledge of infective factors in ulcer and associated pathologic changes.

Now, it seems to me, it is up to the internal medicine man to make accurate observations first hand, correlate them and not to carelessly speak about "ulcer cures." In this sense "ulcer cure" has been confused with "K U R," meaning a system of management, and not a treatment resulting in the absolute eradication of the disease.

I have heard a lot and have seen a good deal of the treatment of duodenal ulcer; it seems to me that the universal, nonsurgical treatment of duodenal ulcer has been like that of gastric ulcer. There has not been developed any special or rational treatment for duodenal ulcer, with the possible exception of that calling for the introduction of the duodenal tube, which tube, theoretically, is supposed to cure by introducing food beyond the ulcer site. The treatment which is so commonly carried out, is simply the treatment of gastric ulcer, and even that treatment is on an insecure foundation, as shown by modern researches.

It appears to me what is first needed is *investigation* and not treatment; not talking to people about "curing" ulcers and saying that if they have an acidity of so much they require an alkalinity of so much. Nobody has ever proved that ulcer of either duodenum or stomach is due to excess acidity. All modern investigation tends to the opinion that in ulcers of the stomach or the duodenum we are dealing with the local manifestation of a systemic ailment. It is just as useless a procedure to attempt to eradicate the disease by powders and pills as it would be to attempt to eradicate arterial sclerosis from an individual by such methods.

What we need is further investigation, and in the meanwhile treating the patient who has the ulcer, rather than devising complicated and ingenious schemes to treat an alimentary tract sore spot, which lesion varies not only from month to month, but even, as one of the discussants said, while we have the pa-

tient in the hospital, presumably in the most favorable surroundings.

DR. DENEEN (closing): The individualizing one man spoke of I believe is necessary in every condition. I believe that is accepted in our line. You must take your patient and study that patient, not just study him to see if that patient has an ulcer. That is a minor consideration. For what else exists along with that ulcer?

As for the etiology of that ulcer, of course we are inclined to believe it is an infection. Probably the infection is primary and again it may be secondary. I don't believe anybody so far has been able to work out a means of eradicating the original focus of infection and then getting a complete cure of the ulcer, either in the stomach or duodenum.

Where all these focal manifestations might come from is hard to say but it is a well-known clinical fact that at the time the patient presents himself to you with an ulcer, that ulcer is of long standing. We know that the first symptom of ulcer is not pain, but that is a later development. It comes much later than the original desquamation area or destruction of the epithelium.

Then from the standpoint of the multiple ulcer. I think those of you who have followed the cases that go to the operating room table very frequently see ulcers in both the stomach and duodenum at the same time. You also very often see more than one ulcer in the stomach and we have seen more than one ulcer present in the duodenum at one time.

Of course, the question whether the patient has had previous medical treatment or not brings out the real object of this paper, that is, to make a definite diagnosis as to whether your patient is properly a medical patient, purely medical in regard to treatment or whether it is a surgical condition or whether it is a combination of both medical and surgical. The condition alone justifies the conclusion and not the line of treatment which you follow out justifying the condition.

One man spoke of rest in bed for six weeks. I treated practically all ulcer cases medically at one time. I used to keep them in bed for six and eight weeks. I don't find that the rest in bed makes a very great material difference. Of course, the first few days rest in bed, when they are on light diet, undoubtedly does help the general condition.

When it comes to bacteremia, which means a condition like typhoid in which there are volumes of organisms floating in the blood stream, it is pretty hard to speak of an ulcer being the localization of bacteremia like you speak of pneumonia being the localization in the lung of bacteremia because I don't believe anybody has been able to produce any blood cultures from ordinary ulcer cases. And so I think it would fall better in the category of focal infection where occasionally you get some organisms breaking loose into the blood stream and localizing the disease.

And we don't speak of cures in any special case. As a matter of fact, we doubt if we can really cure anything any more. When a patient comes to you, it is the duty of the physician to make life more pleasant, more comfortable, more helpful to that patient. If we are going to do it from a purely scientific standpoint and ignore the humanitarian side of the patient, then we can screen off the focal infections until doomsday. It is our first duty to take care of that patient and render that patient economically improved and socially improved and more contented with himself.

It is impossible to generalize either any treatment or any diagnosis. To generalize treatment means that you do not make a diagnosis. And the entire object of this paper was that we reach the point where we could more definitely diagnose our conditions and their associated pathology and in that way know more about what would be the more rational form of treatment to follow.

I think if you will study more carefully your patients as they come to you that you will be better able to give individual treatment to that individual patient and in that way render greater service than in the old way when we said they should have a gastro-enterostomy or whether they should have straight medical treatment. And the controversy you hear generally in the gastro-enterostomy section is usually one of surgery versus medicine. At the last A. M. A. meeting, one of the discussions of the most value was the x-ray or the history. It is the condition of the patient as a whole and your x-ray is just part and parcel of your history because your x-ray shows you simply the physiology and sometimes gives you the interpretation of the morbid pathology, and so I believe, as most every other one that discussed the paper did, that we should individualize, and in order to individualize we must first individualize the diagnosis.

BROKEN GLASS ELECTRODE IN BLADDER

C. H. SOLOMON, M. D., AND J. M. GLASSER, M. D.

CHICAGO

A practice that is to be heartily condemned is the introduction of glass instruments into the urethra and bladder. First, the glass instruments have no advantage over metal ones, and, second, their liability to break is so great that even if there were an advantage it would be foolhardy to risk their use.

Glass female catheters and glass urethral electrodes should be relegated to the museum of medical antiques, and although most men have discarded the use of the glass female catheter, still there are some men who believe in the use of glass urethral and bladder electrodes.

A case which recently came under my ob-

servation was one in which a doctor attempted to cure cicatricial strictures of the urethra with vacuum high frequency treatment. He introduced a glass electrode into the urethra the shape of a Van Buren sound, and treated the patient

Fig. 1. Radiogram of Glass in Bladder.

in this manner for about two months. On the afternoon of the day on which I first saw the man, his doctor upon removing the glass electrode found the distal three inches missing and where the curved portion of the electrode had broken off, the edge was rough and ragged. The patient suffered no inconvenience from the presence of the broken piece of glass and came to my office with his doctor. I advised an immedi-

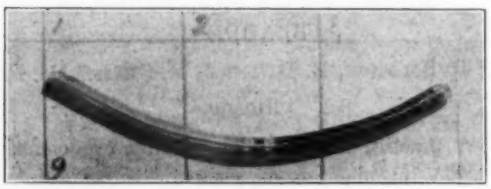


Fig. 2. Glass After Removal.

ate x-ray of the bladder, and the plate showed the broken piece of glass laying transversely in the bladder. As any attempted removal through the urethra involved the greater risk of breaking the glass and injuring the bladder and urethra, a supra-pubic cystotomy was decided upon and done the following morning. The piece of glass electrode was removed and the bladder closed without drainage. The patient made an uneventful recovery.

29 E. Madison St.

CRETINISM IN NORTHWESTERN ILLINOIS.*

GORDON W. RICE, M. D.
GALENA, ILLINOIS.

Cretinism is a disease that robs its victims of the inherited right to normal physical and mental development. It robs the little one of its freedom of action, and its ability to prattle to its parents and playmates. It steals away the happiness of childhood, and condemns its victim to hopeless idiocy. It robs the parents of the pleasures of parenthood, and makes them ashamed of and sorry for their offspring. It sets aside its victim as an object of curiosity. In the words of Osler it makes a "toad like caricature of humanity." Yes, a caricature of what we are told was created in the image of God.

The disease is a chronic condition, congenital, or developing in early infancy; or its development may be delayed until the child is several years old when the juvenile form appears.

The etiology of the disease is not definitely known. Some hold that it is due to an intra-uterine infection of the fetus that destroys or prevents the development of the thyroid gland. I am of the opinion, however, that the condition is due to too great an iodin content in the mother from which the fetus gets a quantity sufficient to supply its wants, and thus causing a failure of development of the thyroid anlage, or an atrophy of the gland after development has started.

In all cases the gland is at fault, and is found either absent, or atrophic and undeveloped.

Cretinism is not uncommon in northwestern Illinois. Whether the geological formation of this region has any thing to do with the cause of the disease, as far as I know, has not been determined. Suffice it to say that at one time the district was under the sea, and received deposits of sand, calcareous materials and mud which were later cemented to make the hard rocks of the region.

Sometime after the Mid-Silurian period the region emerged from the sea for the last time, and after undergoing several cycles of erosion, glaciers advanced depositing drift and filling the main valleys with debris.

Goiter is common in the district, and is fre-

*Address before Jo Daviess County Medical Society, August, 1923.

quently seen in adults, both male and female. Myxedema is also found and I am of the opinion that it is more common than the number of cases reported would indicate.

Inasmuch as we find the three diseases, cretinism, goiter and myxedema all related to pathology of the thyroid gland it would lead one to suspect that there were something indigenous to the region causing them.

The ear marks of cretinism are so striking and stand out so prominently that no case should be overlooked. However, there are cretinoid conditions that decidedly retard the growth and mental development of some children in whom the prominent indications of the disease are lacking.

In well marked cases of cretinism the physical

Fig. 1. Fig. 2. Fig. 3.

and mental findings run true to type. The expression is dull, apathetic and idiotic. The face is broad. The eyes are wide apart. The lips are full and separated. The nose is stubby and broad. The head is large and rounded. The hair is scanty, course and dry. The skin is dry and in some cases quite scaly. The form is rounded, and the supra-clavicular regions full and prominent. The neck therefore is short. The abdomen is full and protruding producing the condition termed by some "frog belly," and resembling on a miniature scale that of the old time beer drinker. The legs are short and well filled out. About the knees, ankles and wrists are masses of tissue as are well shown in the pictures.

The child's development is retarded. He learns to walk two or more years later than the normal child. His gait is slow and awkward. He is clumsy, and his legs are somewhat stiff.

If he learns to talk at all it is done with difficulty, and he may be anywhere between five and ten years old before he is able to say the simplest monosyllabic words. Sight and hearing in the cases that have come under my observation were good.

The mentality is that of idiocy. Such is the fate of these little fellows, unless the condition is recognized early and proper treatment instituted and carried out indefinitely.

The cases that I herewith report were found while calling on other members of the families, and as far as I could learn from the parents the condition had not been diagnosed before None of the children, so the parents told me, had been given anything for the disease.

Case 1. L. W., figures 1-3. Age three years. Parents are not related. They are young people in good circumstances, and both are healthy. Neither shows indications of thyroid trouble. One other child in the family, a normal, well developed youngster. The mother had no difficulty at the birth of L. W. This child, although three years old, cannot stand alone. He has never uttered a syllable. He creeps about the floor, and eats and sleeps well. He has been healthy as far as his general health is concerned.

By reference to the pictures of this child—Figs. 1-3—which were taken in 1918, the following conditions will be observed: The head is large and well rounded. The hair is scanty; face is broad; wide between the eyes; lips thick and parted; neck plump and short. The supra-clavicular regions are full. The arms are plump and about the wrists are prominent masses. The abdomen is large and protruding. The thighs are reasonably full and rounded. The knees and ankles show fullness corresponding to the condition of the wrists. The feet are flat and broad and the great toe separated from the others. The expression is dull and stupid.

Diagnosis: Cretinism.

The condition of this child was explained to the father, the mother being seriously ill at the time, and he consented to let me have pictures of it and to start treatment. Thyroid gland tablets were given, starting with one grain once daily. This was increased to two grains twice daily, which seemed to be a proper dose for this child, and continued for about three months. During this time the child made some improvement and began to walk.

The mother of the child having died from the "Flu," the little fellow was turned over to one of his grandmothers. She, evidently not satisfied with the progress being made, took him to some faker in Minneapolis to whom a goodly number of our intelligent (?) citizens were making pilgrimages. Later I

got from the father that this fellow, one Dunn, a monk of some kind, told them that the child would outgrow the condition.

They were satisfied with the information, and stopped all treatment. The father recently told me that he has not given the child anything since he quit giving the tablets, but recently has been having a chiropractor work on him, and that this bird said he could cure him.

The child is now past seven years old. He walks with a clumsy, waddling gait. Will not sit on a chair, but sits on the floor with his legs folded under him. Speaks very few monosyllables. His mouth is open with dribbling of saliva. His expression is idiotic. This child, under his present environment, is doomed to hopeless idiocy, and if he lives to maturity will without doubt become a public charge.

Case 2. Figures 4-6. C. D., aged past six years. This boy has healthy parents. Several other children in the family, all healthy. Mother had no difficulty at the birth of this child.

Physical characteristics: Head is large; face is broad and wide between the eyes; lips thick and parted; neck short; supra-clavicular regions full; arms plump with wrist full and rounded. Legs are full and well rounded with thickness of tissue about knees and ankles; feet broad and flat with the great toe separated from the others; abdomen large and protruding. Expression is dull, apathetic and idiotic.

The mother informed me that he was always a particularly fat and plump child. He learned to walk after he was three years old. He does not talk. He has never uttered a word that could be understood by the parents. He hears and understands what is said to him and will do simple things told him to do.

Diagnosis: Cretinism.

The father started to give this child treatment and continued for a few months, but for some reason discontinued.

The child is now past ten years old. He walks with a clumsy, waddling gait. His expression has changed very little. His mental condition is idiotic. His parents started him to school last winter, but his teacher told me that she could neither understand what he attempted to say, nor could she do anything with him. He would not obey, and would leave his seat and go about the room at will.

This child also has fallen into the hands of the Philistines—the chiropractors. Another little one doomed to hopeless idiocy, and undoubtedly will eventually become a public charge.

Case 3. C. L. Figures 7-8. The pictures of this child show few of the indications of true cretinism. In fact he is quite a fine looking little fellow.

At the time of taking these pictures he was six and a half years old. He was a twin. The mother had no trouble at his birth. His twin brother was born first, and for the first half year was the heavier of the two.

At about six months of age he began to get fat, and soon was ahead of his brother in weight. By the end of the first year and a half he had become so fat and pursy that the grandmother nicknamed him after a well-known portly young man about town.

He learned to walk after he was two and a half years old, and then in a clumsy, waddling fashion. Now at the age of six and a half years of age he does not talk. He understands all that is said to him, minds well, and will do things told him by the parents. He will attempt to say simple words when told to do so, but acts very diffident and bashful about his attempt. He has strabismus as can be seen from the picture, Fig. 7.

In comparison with his twin brother he has a larger head, and coarser hair, a much larger abdomen, and a slight thickening of tissue about the wrists. He has never been as active, his gait is stiff and awkward.

Fig. 4. Fig. 5. Fig. 6.

He was first seen by myself in January, 1922, and from the history and physical findings I would not call him a real cretin but consider his condition due to hypothyroidism—otherwise a cretinoid.

He was given desiccated thyroid gland, starting with one grain once daily and increasing to two grains twice daily. He continued to take this for four months when he passed from my care.

I was told a few days ago that he improved greatly while taking the medicine, and that during the past winter he had gone to school and was learning to talk.

Case 4. C. H. Aged five years and eight months at the time he came under my observation. His mother asked me to see him because of his rough skin and because he did not talk. She gave the following history of him: He is the second child. His birth was normal. He nursed until two years old. He was nearly three before he learned to walk, and has always walked with a stiff, clumsy gait. He was a

fat child with a big abdomen. Lips thicker than those of the other child.

Physical examination: His head is large and round; hair fine and dry; face broad; his body is fat and plump; his arms and legs are full and well rounded, with small rings of tissue about the wrists and ankles; abdomen full and protruding; skin very rough, in fact in places it approached a condition of ichthyosis. He walked with a stiff, awkward gait, and was very clumsy. He could say simple words. He understood what was said to him and would do what he was told to do.

He presented many of the earmarks of true cretinism, but his mentality and general appearance was better than that of the true cretin. Therefore I would call him a cretinoid.

He was put on desiccated thyroid gland, starting with one grain once daily and increasing to two grains twice daily. This was kept up for six months. During this time his skin cleared up and became smooth, and he began to walk with more freedom, and he

Fig. 7. Fig. 8.

made remarkable improvement in his ability to talk. He is now past seven years old. He went to school last year and did as well in his studies as the ordinary child.

Besides these cases I have seen two others in this vicinity that showed all the indications of true, fully developed cretinism. One a boy about seven or eight years old, and the other an adult female. The latter would make an ideal model for all the pictures shown in text-books treating of this subject.

The parents of a child that has a prominent protruding abdomen, rough skin, large rounded head, expression dull, apathetic and idiotic, a broad face wide between the eyes, nose stubby and broad, thick parted lips, and does not begin to walk and talk at the average age of around fifteen months should take the child to the family physician for a careful physical examination. In fact it would be better for the child possessing some of the above mentioned conditions for the parents not to wait to see if the little fellow begins to walk and talk at the proper age, especially if he is not what is called "a bright baby," but to have the baby carefully examined as soon as they notice that the child is markedly different from former babies of the same parents or from babies of their acquaintance.

The earlier treatment is instituted in these cases the quicker and better results are obtained. There is but one treatment for such cases and that is the proper dosage of thyroid gland, which must be kept up indefinitely.

This treatment is absolutely necessary for the proper mental and physical growth and development of the child. No amount of manipulation, "osteopathic" or "chiropractic," can do any good. All the cases whose pictures are given had "chiropractic" adjustments. Figs. 7 and 8 was rescued by the use of thyroid treatment, the others are doomed to hopeless iodicy.

I believe that it would be to the best interest of children afflicted in this manner, as well as to the best interest of the state, if all cases of infantile or juvenile cretinism, determined as such by a committee of at least three physicians appointed by the judge of the county wherein the parents of the child resides, were committed to a state institution for treatment, there to remain at the expense of the state until the physical and mental condition is such as to justify his return to his parents with a reasonable certainty of him developing into a self supporting citizen.

It has been my experience that the parents of a cretin will not continue treatment long enough to do the child permanent good.

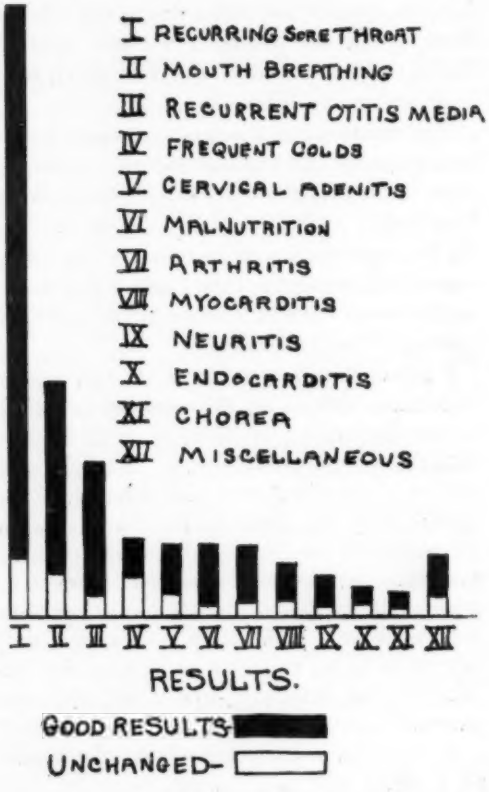
While visiting a hospital recently a well known clinician showed me a cretin, and made the following remark: "It would not be so bad for such children if the parents would carry out the treatment, but they won't do it."

Therefore, I say that it should be the duty of the state to take charge of these little fellows and give them their chance to grow into normal mental and physical development.

OBSERVATIONS ON 200 TONSILLECTOMIES

RUSSELL D. ROBINSON, M.D.,
CHICAGO

It is interesting to note in Holt's "Diseases of Infancy and Childhood" in 1912 the statement that "It is seldom that any but good results follow tonsillotomy, if properly performed," and again "I am not yet convinced of the advantages of complete enucleation . . . but in certain cases nothing else is adequate." That is only 11 years ago, and opinions have so changed, that we now use every refinement of technic to secure complete removal of the tonsil with capsule intact, and expect failure in results if a part of the tonsil is left in the throat.



This survey covers 200 cases, 78 adults and 122 children.

The ages of the children average about 5½ years, the youngest three and the oldest 14 years. The last cases included in this report were operated on in 1922, and the first in 1916, so the results are based on a period of from 1 to 7 years' observation.

I performed tonsillectomy on all of these cases; adenectomy was also done on all children and on 16 adults. Circumcision was done simultaneously in 16 instances, carious teeth were extracted in 5 cases and other minor procedures in a few instances. On only one occasion was tonsillectomy performed coincidently with laparotomy. Twenty-nine patients were operated on in my office and the remainder in the hospital.

Tonsillectomy was done on 51 children, who had "popping" tonsils with a Beck tonsillectome, and enucleation by dissection and snare was done on the other 149 patients. Ether anesthesia with or without nitrous oxide induction was used in all operations.

There were no deaths, directly or indirectly, resulting from this series of 200 cases. I have had almost all of these cases under observation for a period of from 1 to 7 years, except for 11 months' absence in army service.

Indications. Before taking up the various indications for tonsillectomy, I wish to emphasize the importance of complete physical examination in each instance, bearing in mind the possibilities of associated pathology before tonsils are incriminated.

Carious teeth, pyelitis, nephritis, secondary anemia, sinusitis and refractive errors, are some of the commoner disorders which must be ruled out as wholly or partially responsible for the symptoms for which tonsils and adenoids may be blamed.

Overlooking these and other pathological entities, operating for trivial or fanciful reasons, and incomplete removal constitute the causes of failure.

1. *Recurring Sore Throat.* Under this caption I include any type of inflammatory disease, except the specific infections as diphtheria, scarlatina, etc., in which Waldeyer's ring, consisting of the two faucial tonsils, the pharyngeal tonsil or adenoid, and the lingual lymphatic masses are involved. Any component of this group of lymphatic tissues, by extension, usually involves the rest.

Anatomically this area offers an ideal retreat for bacteria—the adenoid tissue tucked up behind the nose, the tonsils with their crypts. Bacterial invasion here, when once established,

is tenacious. We see such cases get a tonsillitis in the fall, with constant recurrences until late spring—an area of low resistance continually subjected to irritation, with the infection harbored ready to ignite any moment.

2. *Mouth Breathers.* In this group, comprising 32 children and two adults, the obstructive symptoms were taken as the most outstandinng indication.

General ill-health, under nourishment, pasty complexion and nervous irritability were concomitant symptoms noted in some, as well as such associated changes as carious teeth, otitis media, adenopathy, chest and palate deformities.

Disturbed sleep and retardation of mental growth was noted occasionally.

Wherever possible carious teeth were removed before operation.

3. *Recurrent Otitis Media.* I feel that one attack of acute otitis media, whether it reaches the purulent stage or not, is sufficient to warrant removal of the tonsils and adenoids.

If tonsillectomy ever becomes a prophylactic procedure, ear extension from diseased tonsils and adenoids, will be one important factor in effecting it.

Some of these patients had otorrhea, others were operated on as soon as inflammatory reaction in the throat subsided after an acute attack of ear ache.

Ear involvement was a complication of scarlatina and measles, as well as head colds in this group, which comprises 19 children and one adult.

4. *Frequent Colds.* Under this heading are included 10 cases, nine children and one adult. The presence of infected lymphoid masses in the throat and naso-pharnyx predisposes to head colds, which in turn usually eventuate in a bronchitis or ethmoiditis. These throats are predilected by the current infections. We so often hear mothers complain that "any cold always flies to Johnnie's throat," which usually means that the infection in the throat from the last cold has merely re-established itself.

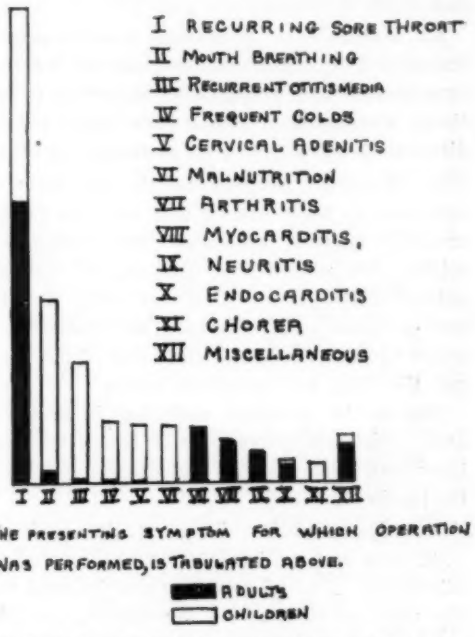
5. *Cervical Adenitis.* Eight of the nine patients in this group are children.

Those cases with adenopathy of the cervical region, as part of the general glandular activity of childhood, and those with adenitis from carious teeth or neighboring infections, are, of course, not included as indications for tonsillectomy.

The adult case in this group proved subsequently to be of tuberculous origin. The glands just beneath the angle of the jaw, and running down beneath the sterno-cleido-mastoid muscle, are most frequently involved in tonsil and adenoid infections.

One six year old boy had three acute attacks with swollen cervical glands and brisk febrile reaction, in as many weeks, with only a trivial tonsillitis.

6. *Malnutrition.* Nine children presented the above indication for removal of adenoids and tonsils. Where other causes can be elimi-



THE PRESENTING SYMPTOM FOR WHICH OPERATION WAS PERFORMED, IS TABULATED ABOVE.

nated, such as nephritis, secondary anemia, improper or poor food and faulty hygienic surroundings, this type of patient almost always shows a satisfactory improvement.

Still, in his "Common Disorders and Diseases of Childhood," attributes the excellent results achieved in tonsillectomy for undernourishment partially to removal of the cause which interferes with sleep and which causes nervous irritability.

7. *Arthritis.* I tonsillectomized five men and 4 women, as a curative measure for joint involvement.

In five of these cases, operation was done as

soon as the inflammatory reaction in the joints and throat had subsided sufficiently after an attack of acute rheumatic fever to safely allow operation.

In one patient who had had almost all major joints involved, and had been in bed six weeks under medical care, tonsillectomy was performed before the joint symptoms had entirely disappeared. Following operation there was an acute exascerbation of the arthritis, which lasted for three days, followed by prompt recovery, without a twinge of joint pain for the past 18 months.

Polyarthritis of a subacute type in the fingers, ankles, back and other joints was considered an indication in the other three cases, all of whom had diseased tonsils.

8. *Myocarditis.* Myocardial involvement, as exemplified by dilatation, dyspnea on exertion, hypertrophy and arrythymia, occurring in patients with diseased tonsils was considered indication for operation in six instances, all adults.

9. *Neuritis.* Neuritis was the indication for operation in three women and two men; one a multiple neuritis, associated with tibial periostitis, alveolar abscesses, empyema of the right antrum of Highmore. Two were sciatic neuritis, one associated with pyorrhea and abscesses at apices of three teeth, and one involved the ulnar and the other the intercostal nerves.

Besides the associated pathology in these five cases which was taken care of before tonsillectomy was performed, all had definite disease of the tonsils.

10. *Endocarditis.* Three adults and one child were tonsillectomized for endocardial involvement. All had hypertrophied infected tonsils, with concealed foci of suppuration and each exascerbation of the throat infection produced a corresponding flare up in the cardiac symptoms. No less an authority than Forscheimer recognized in 1917 the importance of complete enucleation of infected tonsils in these repeated attacks of endocarditis.

11. *Chorea.* Three children with subacute cases of Sydenham's chorea, were subjected to tonsillectomy as a part of general treatment. One girl of seven years had endocarditis—all had infected tonsils.

12. *Miscellaneous Cases.* Under this caption I include seven cases, four adults and three children.

One child suffered from headaches for which I could find no other cause than obstructive symptoms from hypertrophied tonsils and adenoids. Two children had iritis, one with keratitis also, which I considered metastatic from the throat infections.

One man had recurrent attacks of lumbago, usually preceded by tonsillitis. Two complained of "run down" condition with sticking pains in the throat on arising, which passed off during the day.

The last of this group was a woman of 43, who had suffered for the previous 15 years from lupus erythematosus.

I performed tonsillectomy at the suggestion of Dr. E. P. Zeisler; no change in her malady is noted after 22 months.

POST OPERATIVE COMPLICATION AND SEQUELAE

Twenty-nine children were operated on in my office, all under ether. The last of these was a girl of seven. I had removed the tonsils, and had introduced the adenotome into the nasopharnyx, when she stopped breathing.

I removed the adenoid, pulled out the tongue and elevated the angles of the jaw, but instead of the expected deep gasp, the patient became intensely cyanosed, lips were black and the pupils completely dilated. I grasped the patient by the ankles and held her head down, and when I attempted to dilate the rectum, it readily admitted two fingers, there was complete loss of sphincteric tonus, and an involuntary evacuation had occurred. Vigorous artificial respiration was instituted, and finally a feeble inspiration occurred, with re-establishment of cardiac action which also had been suspended. The patient made an uneventful recovery. I have performed no tonsillectomies in my office since this occurrence.

In this series of 200 cases there were five post-operative hemorrhages. Three of these were controlled by administration of emetine or horse serum. It was necessary in two adults to anesthetize and ligate the bleeding points. I have since sutured the pillars in all adults.

One patient 29 years of age, began to run a septic temperature on the sixth post-operative day, accompanied by sweats and productive cough. Roentgenograms of his chest as well as leucocyte counts and physical findings were negative. He cleared up in a week. I suspected a

lung abscess, but was unable to prove its presence.

Post operative pain in the ear was present in about one-half the cases, but there were no cases of post operative otitis.

In two adults, one of whom had undergone operation twice before, there was some damage done to the pillars and soft palate, in freeing the upper pole of the tonsil, which occupied the entire supra-tonsillar fossa, and was imbedded in the soft palate.

Both regurgiated liquids through the nose for about three months, fully recovering.

The uvula was intentionally amputated for elongation in two cases, and accidentally in one. Incomplete removal was noted five times in the series; a portion of one lower pole in three instances, a part of one upper pole, and a stump left in the floor of the tonsillar fossa in each of two cases. Three of these were subsequently removed by me under local anesthesia.

Operative Remarks. In children with large projecting tonsils, rapid complete removal, with little hemorrhage is effected with the Beck tonsillectome. In adults I routinely use a blunt nosed scissors with double cutting edges, to free the tonsil from the pillars, and remove with a Tydings' snare. After the anterior pillar is freed from the tonsillar capsule and the tonsil drawn to the midline a few strokes of the index finger, covered with a bit of gauze, will cleanly separate the latter from its bed—but not always. In some cases I have noticed a projection of fibrous tissue continuous with the inferior pole and projecting down to the base of the tongue. These patients have had previous severe attacks of tonsillitis and quinsy, and this tough adherent lower pole is difficult to remove thoroughly. I grasp this area with a hook, and dissect it free, down to its termination at the root of the tongue with scissors. A branch of the lingual artery is usually cut here.

After enucleation, I make sure by touch and sight that none is left behind, especially at the lower pole and posterior pillar, then in all adults I approximate the anterior and posterior pillars by a mattress suture of catgut, which includes the floor of the fossa, to prevent hemorrhage. I fail to see why we should trust to the contraction of the superior constrictor fibres of the pharnyx to check hemorrhage from two or more arterial branches which have been severed here, any more than we would trust to natural agencies to effect hemostasis in any other location in which we are operating, and sever an artery. In children, when using the Beck Snare, if a full minute of gradual pressure is used in enucleating after the digital tightening of the wire to engage the tonsil, there is only oozing and no spurters, with a dry throat before leaving the operating room. A coagulation test should always precede tonsillectomy.

If care is exercised by the anesthetist in immediately aspirating by suction the caseous plugs which pop out into the field, as well as mucus and particles of adenoid tissue which are loosened with the currette, the likelihood of lung abscess or aspiration pneumonia is greatly reduced.

After removal of all adenoid tissue possible with the adenotome and currette, I think it is always possible to wipe out small adenoid masses from the fossae of Rosenmüller and about the Eustachian orifices, with the gauze covered index finger.

One more point—if it can be sufficiently impressed on the adult patient's mind that he must eat dinner that first post-operative night and continue to eat, and that it hurts less to swalloow semi-solids than liquids, he will not have such a painful throat and a smoother convalescence.

Results. The results are accounted good when the presenting symptom for which operation was performed has disappeared. When the same symptom is complained of after operation I class that as a poor result or unchanged. It is obviously difficult to accurately evaluate results, because the symptoms in many cases overlap; in some instances, as in endocarditis, the best result hoped for, is to check a diseased process, after damage has already occurred.

Many patients included under recurring sore throats, might be placed in the mouth breather group, in the cervical adenitis group or otitis group. I have endeavored to classify the indications for operation and correlate the results on the basis of the presenting symptoms, or the most outstanding complaint which brings the patient to me.

The results, in my experience in this limited series, were best in those whose tonsils and adenoids were the cause of, or predisposed to recurring infections in the throat or ears and

in those suffering from obstructive symptoms, where the symptoms were at the site of the infection rather than removed from it. Thus in 84 patients, 45 adults and 39 children operated on for recurring sore throats, 76 were attended with good results. This does not mean that none of those has had a sore throat since operation, but that the number and severity of the attacks has been so greatly reduced, as to be classed as normal for this area.

Of 34 operated on for obstructive symptoms, 29 were relieved and five were not benefited sufficiently to class as good results.

Of the 20 cases operated on for recurring ear infections, 18 were attended by good results, and only two showed no improvement.

Ten patients were operated on for recurring attacks of bronchitis and head colds. Five of these were very definitely benefited, while of the remaining five, whom I class as poor results, there has been some improvement.

Cervical adenitis was an indication in one adult and eight children, five of whom gave good results.

The adult case proved to be tubercular and was not cured by tonsillectomy.

Three children have not been entirely cured after periods of 20, 22 and 18 months, respectively. I think the poor results in these cases are accounted for by the fact that infection persists in the cervical glands and becomes exalted by the same causes which light up latent infections elsewhere; in short, only part of the infective focus was removed in the tonsils.

Possibly this may account for unsatisfactory results in other instances, as joints, heart valves or other tissues, where a secondary focus has become established metastatically from the primary process in the tonsil.

Of nine adults on which tonsillectomy was performed, six were cured of arthritis.

Five cases had suffered from at least one attack of acute rheumatic fever. Three cases did not show sufficient improvement to be classed as good results. One of these a young man 28, had, besides large infected tonsils, a vesiculitis and prostatitis of two years standing, with arthritis of both ankles, right wrist, back and knees. The other two cases in this group classed as unchanged were both of the chronic polyarthritic type.

Of the six adults suffering from myocarditis, improvement which was marked enough to be classed as good occurred in four cases. There had been with each attack of tonsillitis in these cases, an exascerbation of the cardiac symptoms which disappeared after operation.

The two cases classed as not benefited by tonsillectomy, had also endocardial involvement, one with hypertension and nephritis.

Five adults suffering from neuritis were operated on for diseased tonsils. Three of these obtained excellent results; there were coexisting pathological changes present in two of these, to the eradication of which improvement must be at least partially ascribed. An empyema of the maxillary sinus and four alveolar abscesses were drained, preceding tonsillectomy in one, while in the second, pyorrhea with apical abscesses, was cleared up before tonsillectomy, by teeth extraction.

Two, or 40 per cent. of the cases, have received little benefit thus far from operation.

Two of three little girls with well defined chorea were free from symptoms at eight and 13 months following tonsillectomy; one child was taken out of school for one term, and both were placed on medicinal and hygienic treatment.

The third case, in which the chorea is associated with endocarditis, had had relapses, and while not classed as a good result, shows a justifiable improvement.

Some of the most gratifying results in this series, were in children suffering from malnutrition, which was usually associated with nervousness and obstructive symptoms. Of nine children from the ages of five to 11, all were benefited, and eight began to pick up weight and showed general improvement very soon after removal of tonsils and adenoids. A dietetic and hygienic regime was also instituted; phosphorized cod liver oil was also given.

One patient 29 years old in the group operated on for endocarditis, had been employed in a brick yard pushing heavy cars of brick. Aside from repeated attacks of tonsillitis he had never been sick.

He complained of dyspnea which was always worse after a sore throat, becoming so marked as to finally incapacitate him.

The cardiac apex was beyond the nipple line, with loud double mitral murmurs, accompanied by a low grade temperature.

After removal of the tonsils, which were large

with numerous concealed foci of suppuration, a marked improvement was noted in the heart and general condition, with a gradual decrease to normal of cardiac dullness; he was able to resume his work in six months, and has continued at it for two years. All four patients in this group were benefited, and two decidedly so.

Of the last group of seven cases which I classed under miscellaneous indications, four were greatly improved, and three were not benefited.

Two adults complaining of tiring easily, poor appetite and general run down condition, were definitely benefited by operation.

One man complained of painful back, which seemed to bear a definite relation to attacks of sore throat. This case I interpreted as a myostis of infective origin; it cleared up soon after removal of submerged infected tonsils.

One child with recurrent headaches which by exclusion I attributed to obstruction of the upper air passages by tonsils and adenoids, was cured by their removal.

The case of lupus erythematosus in which operation was recommended by a dermatologist has shown no change; the courses of the two iritis cases in children were not altered by operation.

SUMMARY

1. Survey covers 200 tonsillectomies performed by the writer on 78 adults and 122 children.

2. Results based on from one to six years' observation.

3. No deaths directly or indirectly following operation.

4. General anesthesia employed in all cases.

5. Importance of ruling out associated diseases emphasized, before condemning the tonsils; failure in this, incomplete removal or removal for fanciful or trivial reasons common causes for poor results following tonsillectomy.

6. Symptoms arising directly at site of infection viz.: the tonsils and adenoids or in adjacent areas as the ear, are attended with the best results.

7. Too much dependence is placed on natural agencies in controlling hemorrhage in tonsil operations in adults.

8. Malnutrition cases gave uniformly good results following operation.

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GETTING A MEDICAL EDUCATION IN THE GASOLINE AGE*

FIRO S. IGMA

The moral of this recital is that even the best concrete road has some bumps in it. Furthermore, if you take these bumps philosophically you discover that you have a better appetite at the close of the day.

It was the late Mr. Emerson, I believe, who said in his famous essay on Compensation that every cloud has a silver lining, and that it is the stone that remains placidly quiescent which accumulates a growth of green whiskers, and I had been quiescent for four long years. The why of all this is thus, although some writers who are particular about their style might say, "the why of all thus is this"; take your choice.

After a period of twenty-three years of exceedingly active practice of medicine along came some of those concrete bumps. The war was the first one, for it bumped me out of practice, out of civil life and into the army in a capacity other than a medical capacity. As a matter of fact, for a period of twenty-seven months the war furnished all the corrugations, convolutions, inequalities, irregularities and corduroyitis in general of that life road. The result was that at the close of the day I had a definite and compelling appetite—for rest. In fact, some of my medical friends emphasized the robust size and the lusty hunger of that appetite by saying that nothing short of a long, a very long meal, taken slowly and continuously for a considerable period, would prevent a permanent rest on my part.

Never, up to that time, had I been entirely submerged in confidence in the medical profession. I had always felt that there was a possibility at least, of an error in the judgment of some of them; that most of the doctors meant well and were honest in their beliefs, but that

*Editor's Note:
This article is allowed to appear under a *nom de plume*. The author is one of our greatest medical men, both from a professional and a civilian standpoint. The editor feels that if the name appeared instead of the *nom de plume* it would be easy for any one to identify the school under discussion, while if it is not apparent, any medical school may wear the shoe if it fits. Still more, and it seems to the author that this should have great weight, if the name of the writer appeared and the school is identified it might cause annoyance to some professors, and this the author does not wish to do. There is no intention on the part of the author to cause any unfavorable criticism of any school, or any teacher, or any class of students; the somewhat jocose style was assumed merely to attract attention, and to cause—perhaps—a further study of the methods now in use in our medical schools, to make sure that the present method of instruction is the best one. To the author's mind it is not.

when it came to the matter of infallibility it was likely that each one had a vulnerable point, and my feeling was that a good many of them were composed mostly of points, too. But some change had come over me; maybe the opinion of the first one or two was doubted a bit, but when all the members of the jury said "guilty" when they were polled, it convinced me that they knew what they were talking about. So I started to rest and four whole years went by before I could yawn, stretch myself, stick a bare foot tentatively out from under the bedclothes, get under the shower and then roar, "Are those waffles ready yet?" All of this brings us down to Annie Dominick, 1923.

During four years' time with a fellow reminded off and on that he had better consider the maturing of his straight life insurance policies, and while he is figuring out how much he is going to be out of pocket because he took a lot of twenty-payment-life stuff instead of putting all of his insurance on for his earthly duration, a fellow forgets an awful lot about Freidrich's ataxia and how to ligate the fourth dorsal vertebra. In fact, he even forgets how to talk the medical language—which is a language just as much, and just as incomprehensible as Chinese is. And that's the fix I was in when I began to holler over the bannister about those waffles.

Of course, there is only one place to learn Chinese—I mean medical Chinese, and that's at a medical university. Now, for twenty-nine years I had had the utmost respect for a certain university, for this particular one had turned me loose twenty-nine years before, and both my wife and I had agreed for many months that while my native ability and my natural bent toward medicine and surgery would have brought me distinction even though handicapped by a degree from some lesser school, still we felt that this particular university had probably put a little heavier and richer gold-plated finish on me than any other university could have done, so naturally, when I wanted that finish restored, and wanted all my medical precious metals cleaned and furnished anew we decided to let the old, reliable family jeweler do the job. So back to Alma Mater I went.

Twenty-nine years is quite a while. In fact, almost all of us can remember some grown people who were kids twenty-nine years ago, and they look like men and women now; they talk, and walk, and some of them even show symptoms of thinking. And I knew that there were going to be changes at the university; yes, I knew that. I thought maybe there would be a new janitor, and that there might be enough microscopes so that each student could look through one two or three times a week; or it might be that with all the microscopes and other new things it had come about that someone had discovered another microbe, or a new way of decorating, or assassinating an old one. You see, I had read the daily papers regularly, and I realized that the age of the horse was gone and that King Gasoline now reigned in his stall.

Were there any changes other than those expected? I'll say there were. If you ever went to a circus expecting to see an elephant and two hyenas, and when you got there found thirteen catawampuses and a flock of sky-blue diggerjins, and a whole lot of other willywaps whose names you didn't even know, you can picture about what my feelings were. In the old days there were three, or possibly four men who lectured on surgery, and who did all the clinical surgery that was done—and when one eliminates that sentence from his system it means that there was a lot done—and all the students went to all those clinics. The only difference was that the seniors had the front seats and the "D. Js." had to look on from a greater distance. And clinics! Why, doctors came from more than half way round the world to observe them, and the surgical giants of those days were were worth observing, too. Their names were almost household terms, and when one of them started operating at one p. m. and operated on case after case, case after case until six or even seven p. m., operated and lectured, and taught and quizzed all at the same time, one felt that he had gotten his money's worth. Twenty-nine years ago these men could not be called pioneers, although they did explore many an untouched and unexplored field, but they were at least the builders of our transcontinental medical transportation lines; they were the tillers of the virgin fields; they were the men who uncovered the wealth of nature's resources after the pioneers had passed by.

And their word was law, the law of the Medes and Persians. If they said that "Here we find

certain indications and conditions therefore the treatment must be so and so, and the results will be so and so," anyone could understand that, and every student accepted that. The student wasn't loaded up with a long list of possibilities, of exceptions to the rule, of contingencies which might or might not exist or develop. Of course, any student could read any author on any subject he might desire, but if that author happened to disagree with one of our professors, and if the student at the time of examination wandered off and followed the strange god, woe be to that student. The result was that when that student was graduated he had an opinion four square to the winds of heaven on practically every feature of the practice of medicine. Naturally, when he got out in practice he found that there were exceptions to the rule, and then he always came to one of two conclusions—neither one of which did him any harm. One was that he was an exceedingly wise bird because he had discovered something new. The other was that old Professor Blank wasn't such a whale of an authority after all. More than this, that discovery of an exception to the rule spurred him on to study and to investigate hoping to find other exceptions; even a doctor likes to be a discoverer or an inventor.

Under the university system of the Gasoline Age things have changed. All that wealth and mass of clinical material, all those numerous operations once done by three or four men, is now scattered among about thirty men. These men may be just as good, and just as competent as the previous three or four were, but no longer do all the students see all those cases, nor do they see the technique, nor the modus operandi of diagnosing all those cases, nor do they watch the necessary operations or treatment for all those hundreds of ailing people, for the students, like the patients, are broken up into little groups and each little group of students sees only the small number of cases which can be assigned to the particular instructor of the small group. The result is that today at that particular university—which is one of the largest in the world — a surgical clinic consists almost entirely of talk; or lecturing on some subject or a fragment of some subject; or of hearing one or another student give a resumé of some medical article which some medical soul thirsty for rushing into print has had published in one or another of our myriad medical journals. As a general rule a doctor is looked upon as being the exact antithesis of a humorist, but a few years ago some doctor went into labor and finally gave birth to a descriptive term to be used to identify, specify, isolate, describe and set apart a clinic which was verbal only, from one which was combined of both the verbal and operative elements, and his resultant parturient effort was a "dry clinic"; that fellow was a humorist. Only a few days ago in one of the surgical clinics of one of the few remaining giants of thirty years ago, a man who is still a surgical giant too, a man who used to think a clinic was a weasened thing if he did not have ten or fifteen cases to diagnose and operate on. the other day his clinic consisted of one measly paracentesis abdominalis. It was so simple and easy that he had a clinic assistant do the work, and one of the students might just as well have done it. But they made more fuss, and spilled more descriptive language over that job than they did thirty years ago over a thigh amputation with a gastro-enterostomy thrown in for good measure. That clinic was supposed to last for two hours, and all of that time the head of the clinic was watching the clock on the wall of the amphitheatre, and one could farily hear him groan "How long, oh, Lord, how long?" But don't get the idea that he stopped talking; there were those two hours to be consumed so he thought of some new exceptions, and some more possibilities, and a few idiosyncrasies and bravely finished his task.

Under the university system of the Gasoline Age the graduated student has his bag crammed full of tricks; he has all the exceptions and possibilities with him; his mind is like the pants pocket of the small boy—so full of things he can't find the bit of string he wants. And not only this, for while he is keeping his eye on these exceptions which he is taking out of the bag when he is looking for the rule, he becomes so fascinated and perplexed and hypnotized by these exceptions that he forgets what he was looking for, or he passes it by unnoticed. There is no doubt that a little learning is a dangerous thing, but it isn't half so dangerous to feed a child plainly, wholesomely and rather lightly so that he can fully assimilate his food, as it is to lead him to the Waldorf-Astoria and give him carte blanche. More and more the old-timer

is impressed with the feeling that the university method of giving instruction today is like unto the man about to walk a tight rope across Niagara. Of course, it has been done; the old-timer now in the educational field did it, and his medical forebears did it, but when they got on that rope they carried as ballast and for balance, only those things which experience had proven necessary and desirable. Today, as the young doctor starts to climb up on that rope he carries all the original ballast just as his forefathers did, but in addition he has a tin bucket dangling from one shoulder, and a wash tub is hanging about his neck; then someone hands him two gallons of molasses to balance on his head, and someone else claps a pair of spectacles on him with one red lens and one blue one; then another well-wisher, as a bit of parting advice, tells him to progress forward backward, and to assume a horizontal position vertically, and then he is ready to start out. It's a perfectly safe bet that if he is lucky enough to reach the other shore, and if he has as much human nature in him as the average American doughboy on a long hike, then it's a perfectly safe bet that he is going to put in most of his spare time for the next two or three years throwing away a lot of those exceptions, and those opinions of Tom, Dick and Harry, M.D., and of so stripping his mental baggage that he hasn't anything generally designated as "excess" left. I sometimes think that when it comes to preparing a young man for a life work our universities would do better if they would place a few of our best architects on the committee which has to prepare the curriculum, and which should prune and trim the teachers, for our best architects have grown away from the Queen Anne and the Jigsaw.

But that isn't all; just remember "O Tempora, O Mauruss," which means that both the professors and the students have changed. Thirty years ago the professor, who had been in the harness for perhaps thirty years, was a human being. It may be that Sherlock Holmes might have spotted him on the street for a doctor—most likely by his whiskers—but aside from the whiskers he was as human as you or I. Today he is whiskerless, and today he doesn't need to wear the harness for thirty years to get his identifying galled spots; eight or ten years is enough today, and the photograph on his passport isn't whiskers; it's his eye, his small, contracted, cold, hard, blasè, emotionless fish eye. I'm talking now about the successful doctor who teaches in the big university, and who has a large reputation. You see I carefully draw the line in order to leave my own optical beam on the outside; it's the other fellow's mote we're looking at. I don't mean that doctor's face never smiles; it does, but his eye doesn't. I don't mean he never does a kind deed, but his eye doesn't. It may be that he even plays, but his eye doesn't. I'm not going to say why this is so; I'm not drawing conclusions, my inferiority complex forbids it, but I'm willing to admit that it's my opinion that his mental circulatory system is clogged with "exceptions," and that every so often he has to turn his eyes backward in order to get his traffic to circulating again, and to see that some of those exceptions haven't been stuck in the mud or lost in the shuffle. This opinion may not be entirely scientific.

But watch that doctor in church, in the theatre, in the clinic, in the hospital and see if he doesn't wear that kind of an eye all the time. As to his fireside optic I cannot say; it may be he takes those glass eyes out and lays them on the dresser along with his teeth when he gets home, but all the rest of the time he presents them to the world.

So much for O Tempora; and now O Mauruss, for Mauruss is here. In this one university under consideration, twenty-nine years ago the students came proportionately from country, small town and city; today they come largely from the city only. Whereas, in ye olden days, almost every student was American born of American born parents, and perhaps of grandparents who were born in Delaware and South Carolina and Indiana and California, at this university today, in the senior class of the college of medicine three out of every ten are Jews. I'm not stating that because I'm a Jew hater, or a Jew baiter, but just because it's a fact. I like Jews; they attend to their own business whatever it may be, and they generally arrive. Two out of every sixteen of that class are one generation or less, removed from Southern Europe and three out of every twenty of that senior class are Japanese, Chinese, Philippino or Negro.

And Mauruss and his co-workers don't act as we did thirty years ago. We had our note

books then, of course, but notes were few and far between because the personality of the teacher was so forceful, so vigorous, so stimulating that we hesitated to take our eyes from him long enough to take notes of what he was saying. His inflections, his gestures, his animation, his intonations impressed the important things on the memory, and practically every thing he said was important: he wasn't using a lot of words just to see how they would sound: I mean, just to hear how they would look. Today a class room is a group of reporters writing as swiftly as possible, never glancing up for fear of losing the pace: a race of fountain pens through a forest of paper. There is no attempt to sift the needful or the important from the unimportant: there isn't time for that, and besides they may be asked about one of those "exceptions" in examination: a hundred galloping fountain pens trying to keep up with the exceptions, the possibilities, the contingencies, and the hundreds of opinions which have arisen in the minds of hundreds of observers. Sound reactionary and grouchy, doesn't it? But it isn't. Someway it's hard to get away from that classic definition, given years ago for an ideal university—President Mark Hopkins on one end of a log and a student on the other end. I didn't know President Mark: I don't even remember who it was who fashioned this definition, but President Mark wasn't warming that log for the sake of filling that student full of possibilities and doubtful contingencies: he was feeding that student essentials and doing it with all the frills cut off. He knew too, that the impress of his own personality on that student's mind was the force needed to fasten those essentials in the student's memory. Mark didn't have a text-book in his hand from which he read to that student—as I saw a university teacher doing to his class the other day. If there was something in a book which Mark wanted that student to know he would have sidled over on the log, clapped his hand down on that student's knee and said, "Now John, you get such and such a book, and when you get home after I'm all done telling you about this, you read what that other old geeser has to say about it, and then you form your own opinion." Just as one of our old time professors used to say frequently, "Dis is absolutely so and so: I can brove it: I can demonstrade it, but don't you effer take my vord for it: brove it for yourselfs."

But not all of the teachers in this university belong to the genius which reads from a text-book; some of them still cling to the ways of thirty years ago. In conversation with one who was a graduate shortly after my own year, and one who has become a famous man both as a practitioner and as a teacher, he put this question to me, "What differences do you notice most; what changes impress you the greatest?" The answer was, "The dispersion and dissipation of the resources and the forces at your command, and the awful load of trivialities you hang on the mind and energy of the student." It should be said right here that this man is the head of a department, and is the secretary of the medical faculty, and that his department is the one department which has not been reduced to a fragmentary condition, and parcelled out among a number of clinicians.

Quick as a flash he retorted, "You don't see that in my department do you?" and then he went on, "I know what is in your mind, and I have taught, and am teaching on the same lines, and by the same methods we found so useful in your day and mine, and I am proud to say that students from this department take high rank, and are even considered expert as soon as they get out in the world." I could readily believe him, for after sitting in his clinics and classes day after day, I found that his students were fed only the essentials; that they saw and studied disease in the living body; that they met many and various diseases as presented by hundreds of patients in his clinics.

All of which leads me to exclaim, O Tempora! O Mauruss! O Gasoline!

THE MERCUROCHROME OINTMENT TREATMENT OF VULVOVAGINITIS*

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The treatment of vulvovaginitis as practiced today is extremely variable and renders unsatisfactory and conflicting results. It is believed that the course of the condition extends over many months, and that therapy shortens it but

*From the Vulvovaginitis Clinic of the Michael Reese Hospital Dispensary.

little. The medicaments and methods proposed for the treatment of this condition are innumerable, and up to the present time, we have had no uniformly reliable mode of treatment. Irrigations, instillations, local applications, vaccines, both specific and non-specific, and topical application through the illuminated speculum have all been used and the results obtained thereby have been favorable in the hands of some observers and unfavorable in others.

A brief review of the literature pertaining to the treatment of vulvovaginitis will reveal its present chaotic condition, and will serve to emphasize the need for a simple and effective method.

Blumenthal[1], in a paper read before the New York Academy of Medicine in 1863, recommended that in very acute cases where congestion is marked and depletion necessary, leeches be applied either to the labia or to the adjoining surfaces of the thighs, assisted by hot fomentations or poultices. This treatment was then followed by the use of a solution of silver nitrate, 10-20 grains to the ounce applied locally and was supplemented with the administration of tonics. His results at the time were encouraging.

Bandler[2], Taussig[3] and Perrin[4] reported good results with the use of silver salts, especially argyrol applied locally, while Wolff[5] opposed the use of local treatment in those patients past infancy because he claimed that such a procedure had a demoralizing influence upon the patient. He advised the use of vaccines. Rygier[6] enlarged upon the difficulties of using local measures and upon the lack of permanent results thus obtained.

Adkins[7] believed that the disease ran its course in spite of all one could do to cure it. Certain local measures he found to be of temporary benefit, such as the instillation of cultures of lactic acid bacilli. Whitehouse[8] cleared up eight cases thus treated with lactic acid bacilli, but did not know whether the results were permanent.

Mechanical cleansing by douching or irrigation alone or in conjunction with local applications have been reported to have given good results by G. G. Smith[9] and Fisher[10].

Wachs and Mazer[11] after failure with a silver paste, recommended the use of 1 per cent Dakin's oil instilled daily with a medicine dropper, the child lying in Trendelenberg position—58 chronic cases so treated showed marked improvement in one month. Norris and Mikelberg[12] reported a series of 74 cases similarly treated with cures in an average of twelve weeks.

Rubin and Leopold[13] and Barnett[14] reported appearanace of the discharge in one month by the topical application of silver salts (with swabs) through the electrically lighted urethroscope.

B. W. Hamilton[15], Butler[16], Rygier[6] and Wolff[5] reported cures in from 75 to 90 per cent of their cases treated solely with autogenous vaccines. Similarly Sage[18] obtained good results in 9 cases.

Barnett[14] found no improvement in the vaginal discharge of patients treated with vaccines, but when there was a complicating arthritis, the latter yielded rapidly to this treatment. Spaulding[19] believed that vaccines were not a specific cure, but that they were an additional valuable agent. Murphy and Kreuscher[20] considered the toxicity of gonococcal vaccines to be an almost insurmountable obstacle to their use.

Marfan and Debre[21] used antimeningococcus serum subcutaneously for vulvovaginitis. Grave and unusual anaphylactic symptoms resulted so that this form of treatment was abandoned. Wollstein[22] used autogenous and stock vaccines according to patient's opsonic index, but the results were not encouraging. Graves[24] believed the results from vaccines were so beneficial they should be adopted as a specific part of the treatment. Abt[23], however, believes that they are valueless.

Tieche[25] warns of the danger of "sexual trauma" from the use of local treatment, but concludes that the combination of vaccines and local measures offer the best hope for cure.

Boas and Wolff[26] treated a series of cases which they divided into three groups. One group received vaccines only, another group received vaccines and local treatments, and the third received local treatment only. They obtained the best results from the series treated with combination of vaccines and local instillation of silver nitrate solution. Vaccine treatment alone gave no improvement.

Thermal baths were utilized in the treatment of vulvovaginitis following the favorable report

of Weiss as to the effect of raising the body temperature in gonorrheal patients. Engwer, Ylppo and Bendix each reported a cure. Risseoloda, Schultz, Nast and Scholtz had less favorable results. Schultz obtained severe reactions in children and warned against the use of thermal baths for the young.

. Gellhorn in 1920, described the method of treating vulvovaginitis by means of daily injections into the vagina of 1 per cent silver nitrate in an ointment of equal parts of lanolin and vaseline, the advantage of the ointment over the watery solution being that the bactericidal agent remains in contact with the diseased mucosa continuously and has the ability of penetrating into the crevices of the vagina. Because of the simplicity of the method and its rational appeal in this condition we decided to utilize it. We substituted 1 per cent mercurochrome, however, for the silver nitrate because it is less irritating, less astringent, and equally efficient as a germicide.

The ointment is injected into the vagina by means of an ordinary glass irrigating syringe having a slender nozzle, to which a piece of sterile soft rubber tubing three inches long and ¼ inch diameter is attached. This tubing is introduced into the vagina and slowly pushed inward along the entire length of the vagina. The vagina is then slowly filled to capacity with the mercurochrome ointment, the excess of ointment being allowed to ooze back through the hymenal opening, covering and protecting the irritated vulva. The tubing is changed for each patient and is sterilized by boiling. These treatments are given daily and no irrigations or other treatments allowed but a daily tub bath is insisted upon. The mothers are urged to change the children's underclothing frequently. The method is so simple that a large number of children can be treated in a short time and it is painless so the children co-operate readily.

Smears and cultures were taken at the beginning of treatment and repeated every two weeks after a day of rest from treatment. When negative reports were obtained this procedure was repeated at weekly intervals until three successive negative smears and cultures were obtained. Treatment was then suspended, smears and cultures were then taken two weeks later and if negative repeated finally in three or four weeks to determine cure. Further observation was continued for a period equal to the time of the active treatment before the patient was discharged as cured. Furthermore, these cases have been followed up for the next year to determine the permanency of the cure and to detect recurrence.

Our patients were classified into three groups, the gonorrheal, suspicious gonorrheal and non-gonorrheal. The diagnosis was established by the culture and smear. If the smear revealed pus cells with gram negative intracellular diplococci of typical morphology, the condition was considered gonorrheal. If gram negative extracellular diplococci were present it was considered suspicious.

As we reported in a previous communication, (Stein[30]) our cultural results gave us no additional aid to the smear diagnosis and in some instances failed to corroborate the smear. We, therefore, have ceased making cultures in these cases as an unnecessary procedure and rely upon smears entirely for diagnosis and criteria of cure.

In our first publication in this study, we reported the results obtained in sixty-six patients treated by the method described. To that number we wish to add seven more cases and summarize the results in the seventy-three cases.

Gonorrheal—there were eighteen patients discharged as cured in an average of 9.7 weeks.

Suspicious Gonorrheal—fifteen patients were discharged as cured in an average of 6.5 weeks.

Non-gonorrheal, most of whom were infected by organisms from the intestinal tract, there were forty patients cured in an average of five weeks.

Seventeen other patients treated irregularly could not be included here because of lack of clinical and bacteriological evidence. These cases were incomplete.

We were able to examine twenty of the above mentioned seventy-three patients one year after their discharge and found them all free from local symptoms and negative bacteriologically. This is the most gratifying phase of the investigation, for many varieties of local treatment have been reported satisfactory for clearing up the discharge, but recurrences have been very common. Recurrences occur particularly after acute contagions. If a method is used which clears up the clinical evidence of the disease in a few weeks, and there is no recurrence in a year, it may safely be recommended as a reliable therapeutic procedure resulting in cure.

Prophylaxis

Vulvovaginitis is a repulsive and distressing condition; everything possible should be done to guard female children from contracting it. The value and necessity of insistence upon a strict prophylaxis in every case of vulvovaginitis whether institutional or not, can be gathered from the study published by Gittings and Mitchell[29]. They give the following sources of infection:

Infection in some other member of family	102
Hospital wards	107
Hospital dispensaries	1
Playmates	31
Sleeping arrangements	14
Toilet and bathing facilities	10
Public schools	8
Temporary institutions	13
Permanent institutions	1
Day nurseries	5
Bad habits and bad character (probably in older children)	15
Rape	8
Doubtful	93

To guard against these sources of infection, children should always sleep alone; the child's genitals should be frequently inspected by the mother and scrupulous cleanliness by frequent bathing, sponging with warm solutions and powdering should be maintained. The toilet seats in schools should receive special attention. The child should be instructed how to protect herself against the seat contamination. She should be taught how to properly cleanse herself. Whether infected children should be kept out of schools, public toilets, baths, etc., is a virile question. As pointed out[31] previously, the gonorrheal patients must be kept apart, but those with the non-specific infection may attend school, insofar as they are usually self contaminated.

Hospitals and other institutions which house little girls permanently or even temporarily should have a well developed aseptic technic in the handling of children. Abt[28] urges the isolation of all cases of infection, and the temporary isolation of all admissions to children's institutions until three negative smears are obtained. Nurses handling these cases should wear gloves. The children should have individual beds, thermometers, soap, towels and bed pans.

Active Treatment

On the basis of our study of this group of cases and because of the unsatisfactory state of the treatment as described in the literature, we recommend the following procedure in vulvovaginitis, both specific and non-specific:

1. Daily injections of 1 per cent Mercurochrome ointment by the method herein described.
2. Daily hygiene consisting of a tub bath and change of undergarments.
3. Isolation of gonorrheal patients insofar as is possible.
4. Avoidance of irrigations and instillations of strong medicaments into the vagina.
5. Careful bacteriological diagnosis based upon expert smear examination.
6. Determination of cure by repeated smears over a period of time equal in length to the time of treatment.
7. Follow up for permanence of cure and evidence of recurrence.

CONCLUSIONS

1. Vulvovaginitis can be cured by daily injections of 1 per cent Mercurochrome ointment into vagina.
2. Gonorrheal vulvovaginitis was cured by this method in an average of 9.7 weeks in our hands.
3. Non-gonorrheal vulvovaginitis cured in five weeks by this method.
4. In twenty cases, which we were able to follow, there were no recurrences in the year following the treatment.
5. We urge the adoption of this method of treatment of vulvovaginitis, because of ease of administration, freedom from pain and irritation and because of the rapidity and permanence of the cure.

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Society Proceedings

ADAMS COUNTY

The January Meeting

The January meeting held at the Quincy Country Club on January 16, was the annual social evening of the Adams County Medical Society and was a Stag affair. The meeting was preceded by a banquet in honor of Dr. Wm. Engelbach of St. Louis and the president, Dr. W. F. Pearce, was in the chair The Red Jacket Orchestra of Quincy furnished special music during the meal. Thirty four members were present. Dr. J. H. Jurgens of Quincy was a guest.

Following the banquet the regular business session was suspended until the February meeting except for one item of business. The Secretary explained the desirability of developing Quincy into a larger and better medical center and the advantages of publishing a Bulletin each month. He then made a motion that the secretary be authorized to publish a Bulletin each month and that the society appropriate $100.00 from the treasury to pay the expense of same. This was carried without a dissenting vote.

Following this brief business session the members enjoyed a most excellent talk by Dr. Engelbach of St. Louis, on "Osseous Development (Roentgenlogically) and The Result of Treatment of Ductless Gland Disorders," an abstract of which appears elsewhere in this Bulletin. This talk was illustrated by about 50 stereoptican slides and was enjoyed by all. Everyone was impressed with the original work Dr. Engelbach has done with the X-ray as a means of early diagnosis in many of the endocrine disorders. Following the address Dr. Engelbach answered many questions pertaining to endocrinology. Adjournment was made after a rising vote of thanks was extended to our guest for his excellent address. Cards were enjoyed by some of the members after the conclusion of the address.

February Meeting

This was a joint meeting of the Adams County Medical Society and the Adams-Hancock county Dental Society. It was the largest meeting in recent years, there being 49 members and guests present. Dr. W. F. Pearce, president, was in the chair. Minutes of December and January meeting read and approved. The report of the committees on "Parking of Cars in the Downtown District," and "Newspaper Publicity Campaign" were received and continued. The Board of Censors reported favorably on the applications of Drs. J. H. Jurgens and A. K. Germann as members of the society and they were declared elected into membership. There was some discussion about the accepting of advertising in the Bulletin which terminated in a virtual vote of confidence in the secretary for the advertisements that had been accepted and the general character of the Bulletin. The bills for the month were presented and allowed. The scientific papers for the evening were, one on "Focal Infection from a Dental Viewpoint" by L. H. Wolfe, M. D. of Quincy, and another on "Focal Infection from a Medical Viewpoint," by O. F. Shulian, M. D. of Quincy. These papers proved highly interesting and were discussed by Drs. King, Williams, Jurgens, Montgomery, Tieman, Keeney, Swanberg, Buehner, and Beirne, of Quincy. The combined meeting was so successful and so thoroughly enjoyed that an invitation was extended to the dentists to have them meet with us again at the next meeting of the Society on March 10th, at which time Dr. E. H. Ochsner of Chicago will address us.

Adjournment was made about 11:10 P. M.

Harold Swanberg, M. D.
Secretary

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, January 30, 1924

Subacute Bacterial Endocarditis in the Bacterial and Bacteria-free Stages E. Libman, New York, N. Y.

Discussion—Walter W. Hamburger, Chas. L. Mix and Frederick Tice

Joint Meeting Chicago Medical Society and the Chicago Society of Industrial Medicine and Surgery, Feb. 6, 1924

1 Fracture Dislocation of Lower Tibia and Ankle, Method of Reduction After Application of Plaster Cast.

Discussion—C. W. Hopkins and S. C. Plummer.

2 Reduction of Disability From Lead Poisoning.

Discussion—George Apfelbach and James G. Carr.

Regular Meeting, February 13, 1924

The Present Surgical Treatment of Gastric and Duodenal Ulcer—A. A. Berg, New York, N. Y.

Discussion—Arthur Dean Bevan, Milton M. Portis, Bertram Sippy, Karl Meyer, Alfred A. Strauss

Regular Meeting, February 20, 1924

1 Some Newer Developments in the Non-Operative Treatment of Cancer. A Preliminary Report—Ed. H. Ochsner.

General Discussion—

2 The Value of Pyelography in Abdominal Diagnosis.

(Illustrated by Lantern Slides—Daniel N. Eisendrath.

Discussion—Harry Culver, Herman Kretschmer, B. C. Corbus, Robt. Herbst, Vincent O'Connor

Joint Meeting Chicago Medical Society and the Illinois Hospital Association

Feb. 27, 1924

1 Illinois Hospital Association; Its Aims, Accomplishments, and Relation to the Medical Fraternity—E. T. Olson.
2 The Duty of the Physician Toward the Hospital—J. Chase Stubbs
3 Advantages and Disadvantages of the Closed Hospital.—Chas. E. Humiston, Ralph B. Seem, Supt., Future Hospital University of Chicago —J. V. Fowler, Emil Ries.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

Meeting of Feb. 5, 1923—(Continued)

DR. JOSEPH C. BECK, referred to the treatment in the hereditary tarda cases. In the past year he had observed four cases which were very interesting. One was a meningeal case late in life, in which there was a bilateral facial paralysis. He assumed that this condition extended through the internal auditory meatus. The patient was placed on arsphenamin and responded very readily to the intravenous use of this drug. The condition cleared up and the patient left the city but three weeks later he received a letter from him stating that he was completely deaf and that the face was immobile again. Dr. Beck thought Dr. Mackenzie would recall the work of Dr. Benario showing that swelling of the nerves in the narrow canal occurred in the early part of the treatment, but if followed by more arsphenamin this condition would clear up. This had been the experience of many of the men, among them Hata, who claims to be the man who discovered salvarsan, and Dr. Beck thought this an important thing to bring out. He had had several cases of hereditary tarda in which the symptoms, mentioned by Dr. Mackenzie, were present. He had tried the galvanic current and the man screamed with pain as soon as the current was turned on, claiming that he felt severe pain at the site of application of the current.

In a case of hereditary tarda with marked keratitis they placed the patient on a chair and surrounded her with a rubber cover and burned calomel, allowing the calomel fumes to cover the patient's body. It seemed that this form of mercurialization had a very desirable effect on these deaf patients. Dr. Beck had recently seen a boy of about twenty who was absolutely deaf, who gave no reactjon to cold water or turning and who had a severe labyrinthitis. Three months later he had a negative Wasserman reaction. That man's ear improved markedly on some days, again, he would be practically stonedeaf. He had no reaction to turning and when the electric current was applied he complained of severe pain and did not tolerate the test.

DR. ROBERT E. SONNENSCHEIN said that the change in the bone conduction in early cases of syphilis had been noted, especially by Oscar Beck and others. It was characteristic that before the hearing changed to any degree the bone conduction was very markedly changed. Dr. Sonnenschein asked Dr. Mackenzie whether in the cases where the ear was markedly impaired the change in bone conduction threw any light on the differentiation between labyrinthitis and neurolabyrinthitis.

DR. HARRY W. WOODRUFF, Joliet, Ill., said he had been rather struck with the infrequency with which one encountered involvement of the labyrinth with interatitial keratitis. Interstitial keratitis from hereditary syphilis was one of the more common eye diseases, in fact, phlyctenular keratitis and interstitial keratitis form the most common diseases of the cornea in childhood. It had been mentioned that one seldom finds the Hutchinson triad in these cases and that there was lack of results from any form of treatment and Dr. Woodruff thought the ophthalmologists would agree with this statement. Some had gone so far as to advocate not treating these cases at all but he always treated them energetically with some form of mercury. It was true that during the treatment of these cases the second eye would nearly always become involved, notwithstanding the thoroughness of the treatment. The results in these cases were not so bad so far as the cornea was concerned. It was seldim that permanent and complete loss of vision occurred. Dr. Woodruff recalled a case which he had had under observation for many years with interstitial keratis and also involvement of the labyrinth. The cornea cleared up very well and the patient had useful vision while the labyrinth never recovered, although it had not reached a stage that incapaciated her. Whether this was simply the result of time or of the mercury he could not say.

DR. THOMAS FAITH agreed with Dr. Woodruff regarding the appearance of keratitis in the second eye. He recalled that some years ago it was a common notion not to treat syphilis in interstitial keratitis but to regard the disease as post-syphilitic and improve the general health in every way possible, clearing up the indications of the disease as far as possible.

DR. GEORGE W. MACKENZIE (closing), expressed his pleasure with the discussion and thanked the gentlemen who took part in it.

Regarding Dr. Shambaugh's question about exacerbations following the use of arsenical preparations, Dr. Mackenzie thought that a paper published several years ago by Dr. Beck in which he stated his experience with the Herxheimer reaction and other things, including neurorecurrences, would answer Dr. Shambaugh's question. Before the day of arsphenamin many other preparations were used, and the big objection being that the arsenic hit the central nervous system too often and too hard, more particularly the cranial nerves, so the Jap, Hata, with Ehrlich, tried to obtain a synthetic arsenic preparation that would not do these damages. Their success was challenged for a while when some odd cases of damage to the second and eight nerves were reported. But in those cases it was found that upon pushing the arsenic preparations still further and harder, the conditions that appeared to be caused by the arsenic, cleared up showing that the apparently bad results were produced by insufficiency of treatment rather than by the salvarsan itself.

Regarding Dr. Wilson's question about the 20 milliamperes, Dr. Mackenzie said that in the paper he stated that he used 20, or as much as the patient could tolerate. Very few of them could tolerate more than 10 or 12 m.a. He thought one did not need to use more than 8 but occasionally he goes as high as 12. He had tried the 20 on himself and admitted that it was very painful. If the technic was good Dr. Mackenzie was sure that it was possible to get reaction that could be observed with the eye long before the appearance of vertigo, and any patient who had a falling reaction because of the galvanic current already had marked nystagmus, the difficulty being that the operator did not recognize it. The nystagmus obtained with the galvanic test is a mixed rotary and horizontal nystagmus, because the end organs are being stimulated in all three canals.

The first requisite in making this test is a good light. The operator must get into a favorable location, with a head mirror in position and, standing in front of the patient, throw the light into the patient's eyes obliquely. Next, the head must be tilted very slightly backward with the lids elevated by the thumb of the examiner so that the equator of the globe may be observed. A movement of ½ mm. at the corneal limbus is equivalent to 2 mm. at the equator. With the head tilted backward and lid elevated, one can distinguish well what would be a very tiny nystagmus at the corneal limbus. The question has been asked, why not try for a big movement? The same objection applies here as in the cast of after-nystagmus.

In after-turning nystagmus one will notice a wide excursion nystagmus immediately upon stopping turning which can be seen at a considerable distance through the normal palpebral fissure which gradually slows down until it ceases alto-

gether. The most essential thing to do is to time the nystagmus and if one is not a keen observer he will surely miss the fine movements toward the end of the reaction or, say, after fifteen seconds, when he is apt to record the after-nystagmus as fifteen seconds. The careful examiner should study the movements in the after-turning test until they cease altogether. From the fifteenth second on to the twenty-fourth, the movements will be observed to become finer and finer unitl it becomes a question whether there is any movement or not. He thought it was well to use a split second stop watch and snap the moment the examiner thinks the movements cease and again when he is dead sure they have. If one produces with galvanism a big, course nystagmus, the question of the personal equation enters too much. The proper thing to do is to use the least amount of milliam perage that is required to produce the least amount of nystagmus. Nystagmus which is just as fine as that noted after the sixteenth or seventeenth second in the case of after-turning nystagmus. Otherwise the test would be of no value.

Dr. Mackenzie thought he might have left some confusion in the minds of some of those present as to the types of syphilis of the temporal bone. He had described during the last several years the types of syphilis he was best acquainted with and which were possible of differentiation by the galvanic test. There are other forms which he did not feel prepared to discuss at this time. Parasyphilis or metasyphilis is not tardy syphilis; they are entirely different conditions. Neurolabyrinthitis is not syphilitica tarda but the result of syphilis of the meninges that every syphilitic patient manifests more or less during the secondary stage. When a patient has syphilitic meningitis of the arachnoid and more especially of the pia, there is not only the meningitis present but meningo-encephalitis. Later there is cicatrization and nothing scars like syphilis. After several years of contraction of the previously inflamed membrane and cortex, atrophy of the cortex of the brain results; in other words, paresis. The same explanation holds in the case of the spinal cord. In the Lissauer zone, where there is no medullary sheath to the fibers of the posterior roots we have a place where the risistance is weakest that is most affected and when the pia shrinks it gives rise to the so-called lightning pains of tabes. If it happens to hit the fifth nerve, the patient is liable to have (in the cervical type of tabes) *tic douloureaux*. Dr. Mackenzie recalled a case in which the Gasserian ganglion had been operated and removed. The patient subsequently was seen in the Neurological Clinic and still had pains because the Gasserian ganglion is peripheralward of the roots of the sensory part of the fifth nerve. The same process takes place in the eighth nerve, when we have a primary atrophy, due to the effects of the original neurosyphilis and the subsequent contraction that takes place in the meninges. Retrolabyrinthine primary atrophy of the eighth nerve is comparable with primary atrophy of the optic nerve. This is perhaps the condition Dr. Dean had in mind. In these cases the deafness is due to primary atrophy of the nerve and not to Hutchinson's syphilitic triad. Primary atrophy is due to the late effects of earlier neurosyphilis.

Regarding Dr. Heitger's statement concerning the fact that they found only three cases of the Hutchinson triad in 700 cases of congenital syphilis studied in St. Louis, Dr. Mackenzie said that the reason for this was that if a child was affected at thirteen years of age with a syphilitic keratitis, that child usually was sent to the eye clinic. If it happened to be affected with difficulty of hearing it was sent to the ear clinic. Dr. Mackenzie thanked Dr. Heitger for making clear his early experience and then his later experience with the galvanic test, and thought he would bear him out that he had found the nystagmus present before the patient complained of vertigo and without any falling reaction. Some children are a little fearful if one starts with electricity, but after obtaining their confidence the test can be made quite readily. He invariably makes the galvanic test and where it is necessary makes all three and then asks the patient which was the most painful. They invariably say the caloric test no doubt because it produces, with the head erect, rotary nystagmus; besides, the caloric test is more unpleasant for the reason that it is less under control and is prone to produce vomiting and severe vertigo. He believed the least unpleasant test of all was the galvanic.

As to the technic, the observation of the nystagmus was of the greatest importance. Dr. Mackenzie uses an electrical apparatus made by Geiger of Philadelphia, which was designed for his particular purpose. He formerly used the current from the building in which his office was located which generated its own current and which was supposed to be 110 volts but really averaged about 90 volts. He has an ammeter which is full jeweled, the same as a full jeweled watch. As to voltage and milliamperage, he did not know the exact difference, whether 220 or 110 volts would produce any difference in effect so long as the milliamperage remained the same. Where he is located at present he uses the street current of 110 volts. So far as the ammeter readings were concerned, he could see no difference in the reaction between the current formerly used which tested out at 90 volts and that which he is using at present, which is 110 volts. He was not expert enough to answer the questions raised by Dr. Richards. In his opinion the apparatus could be used with the street current because he is now getting just as satisfactory results as when he used the 90 volts.

A very essential point in the work is to see that the electrodes are perfectly wet. He uses normal saline solution; has the electrodes dripping wet, with a small ball electrode for the ear with contact that can be made and broken at will. He has a polarity switch in connection with the instrument. It is necessary to have an assistant to contral the current and read the meter. He does not know the polarity when making the test, but the moment he observes the nystagmus he notes the polarity. He starts with a low current and is never satisfied with one test. If a questionable reaction is observed at 3 or 3½ m.a. and at 4 or 5 the movements are unmistakable, the reaction is positive somewhere between 3½ and 4½ m.a., and is generally credited as 4. He is not satisfied with one test alone but repeats it. It is absolutely necessary to have a good light, to look for eye movements at the equator of the globe, to use a very small ball electrode, or put the electrode into the canal, ignoring the tragus, and have the electrodes vrey wet.

As to the electrode applied to the tympanic membrane, Dr. Mackenzie saw no objection to this and hoped that Dr. Salinger would continue using it in that way and give the results of his findings at a later date.

Dr. Mackenzie had obtained some very definite results with 4 m.a. of current. It is known that if the skull is fractured from any cause whereby the petrous bone is not only broken but the fragments are displaced and overriding, and the patient discharges from the ear, not only blood but spinal fluid, then the inner ear must be out of function. In cases of this kind mixed horizontal and rotary nystagmus to the opposite side is found, with complete deafness, because he has lost the tonus from the ampulla of all three semicircular canals, which was present when the ear was intact. The tonus is lost immediately the labyrinth is destroyed and the balance is in favor of the other side. The amount of loss can be measured with galvanism. The minimum amount of anodal current to produce nystagmus to the opposite side comparable with destruction is 4 m.a. This indicates that the tonus loss by the destruction equals 4 m.a. He has verified this, for although the patient's labyrinth is destroyed, the nerve stem is intact and reactive, and by applying 4 m.a. of cathode stimulation to the destroyed side, the nystagmus to the opposite side is arrested. Applying 4 more m.a. to the destroyed side, making a total of 8 m.a. stimulation, produces a nystagmus toward the side of destruction.

Dr. Mackenzie extended a cordial invitation to anyone who happened to be in Philadelphia to visit him and said he would be glad to go over the galvanic test with them and demonstrate the technic.

CRAWFORD COUNTY

Regular monthly meeting of the Crawford County Medical Society met in the Library of the Robinson Hospital at 2 o'clock, February 14, Dr. O. G. Taylor presiding, with twelve members present.

The matter of establishing a Public Health Unit in Crawford County was discussed most thoroughly by

the members present. A motion was made that a committee be appointed to investigate this matter further from all angles and to confer with Board of Supervisors.

An amendment to the above motion was made that the various civic organizations, such as Chambers of Commerce, be interviewed and the matter explained to them.

The motion with its amendment was carried and the following committee appointed by the Society: Drs. C. E. Price, Voorheis and Henry and the Secretary made an ex-officio member.

The scientific side of the program was then taken up.

Dr. G. H. Henry made a very able and scientific talk on Goiter. His remarks were timely and to the point and displayed a great deal of thought and work on the part of Dr. Henry in preparing his paper.

Dr. B. L. Price then read a paper on Review of the Treatment of Pneumonia for 20 Years. Dr. Price covered the ground very thoroughly in a short paper on such a large subject.

Their being no further business, adjournment was taken.

L. P. Sloan, Secy.

SEND ON DATA FOR MEDICAL BLUE BOOK

The publishers of the Illinois Medical Blue Book, McDonough & Company, 416 S. Dearborn St., Chicago, desire data pertaining to every doctor in Illinois. Blanks have been sent out to the doctors but thus far responses have been slow, the doctors seem not to realize the importance of prompt attention to this matter. We urge every physician and surgeon to send in their data at once so that the medical directory may be gotten out at once. This medical directory of the physicians in Illinois is of great value to the profession. New editions of this book have been gotten out each year for decades and we should all help to make the directory as accurate as possible.

Send on the data pertaining to yourself at the earliest possible moment.

Marriages

Duke R. Gaskins, Harrisburg, Ill., to Miss Carmen Patterson of Carthage, Mo., January 18.

William James Hurley to Miss Frances Anna Kreuz, both of Chicago, January 23.

Lawrence H. Roblee to Miss Beatrice Angela, both of Chicago, February 16.

Personals

Dr. Wilson K. Dyer has been appointed assistant superintendent of the Kankakee State Hospital.

Dr. George Thomas Palmer has been appointed a member of a committee to establish institutional standards for the sanatoria of the country, under the supervision of the National Tuberculosis association.

Dr. Budd C. Corbus, Chicago, spoke on "Diathermy in Urology" before the St. Louis Medical Society, February 12.

Dr. Dean Lewis was the guest of honor of the Peoria Medical Society in that city, February 5. He spoke on "General Infections and Their Treatment.

Dr. Robert H. Herbst, professor of urology at Rush Medical College, addressed the Scott County Medical Society in Davenport, Iowa, February 5.

Dr. George E. Shambaugh read a paper before the section of otology of the New York Academy of Medicine, February 8, entitled "Review of Personal Researches on the Structure of the Internal Ear."

Dr. Ray Mercer, Quincy, has been appointed commanding officer of the new medical unit of the One Hundred and Third Infantry, Illinois National Guard.

Dr. John D. McGowan has retired as chief surgeon of the Commonwealth Edison Company after twenty-five years' service. Dr. Arthur V. Allen will succeed him.

Dr. Charles S. Bacon, head of the department of obstetrics and gynecology at the University of Illinois Medical School, has been appointed chief of staff of the new Salvation Army Hospital for women.

At the annual meeting of the Chicago Ophthalmological Society, January 21, Dr. J. Brown Loring was elected president; Dr. Charles G. Darling, vice-prersident, and Dr. Charles P. Small, secretary-treasurer.

Dr. Robert C. Cook, assistant pediatrician, division of child hygiene and public health nursing, state department of public health, has been appointed acting chief of the division to succeed Dr. Clarence W. East, who resigned February 1.

Part of the $600,000 estate of Mrs. Clara A. Abbott, widow of the founder of the Abbott Laboratories, has been left to "advance the causes of medical, surgical and chemical charities," according to the terms of her will.

On February 12, several hundred Chicago

physicians attended a dinner in honor of Dr. James B. Herrick. Dr. Ludwig Hektoen presided, and addresses were read on the various aspects of Dr. Herrick's career.

Dr. Wilhelmina Jacoba Jongewaard, Chicago, has been appointed to the infant and child hygiene division of the Indiana State Board of Health to succeed Dr. Myrta Wilson, who resigned to go to Africa as a medical missionary.

News Notes

—The new Salvation Army Hospital, for women, North Crawford Avenue, will be formally opened, April 15.

—A $60,000 addition will be erected by the Holden Hospital, Carbondale, about April 1.

—Plans have been made for the erection of a $90,000 addition to St. Mary's Hospital, Streator.

—The Community Hospital, Geneva, has issued bonds for $100,000 to erect a new building.

—It is proposed to erect a $60,000 addition to the Municipal Tuberculosis Hospital, Peoria, in the near future.

—Plans have been made for the erection of a $500,000 addition to Mount Sinai Hospital, California avenue.

—The next regular meeting of the Chicago Orthopedic Club will be held at the Home for Destitute Children, Paulina and Park avenues, at 8 p. m., March 14, 1924.

—The Berwyn Medical Unit, Berwyn, of which Dr. Arthur MacNeal is in charge, is having plans drawn for a $75,000 addition.

—Plans have been drawn for the new Illinois Masonic Hospital which will be erected at a cost of $250,000 on Wellington street. Most of the money has already been subscribed following a drive for funds.

—The city council health department has appointed a committee to consider the remodeling of the House of Correction Hospital, as a home for the free treatment of drug addicts. The hospital is not in use at the present time.

—The department of public welfare and the board of trustees of the University of Illinois announced that the new group of medical buildings will be dedicated, March 6, in the library building, at Polk and Lincoln streets.

—The Chicago Tuberculosis Institute is devoting much space in windows downtown to exhibits, which include automatic stereopticon pictures, moving pictures, posters, booklets, and material illustrating various phases of the institute's program.

—At the annual meeting of the Chicago Society for the Prevention and Relief of Heart Disease, February 8, the following officers were reelected for the ensuing year: President, Dr. James B. Herrick; Dr. Robert B. Preble, vice-president; Dr. Sidney Strauss, secretary, and Dr. Robert H. Harvey, treasurer.

—Dr. Clarence W. East, medical director of the Illinois Crippled Children's Society, has opened offices in St. John's Hospital, Springfield, where the medical headquarters of the new organization will be. The first crippled children's clinic under the new system was conducted in Quincy, February 4.

—Dr. Arthur Edgar Price, according to reports, was sentenced to one year at Fort Leavenworth, February 8; he pleaded guilt to violation of the Harrison Narcotic Law. Dr. Price was formerly instructor in clinical surgery at the College of Physicians and Surgeons of Chicago (University of Illinois Medical Department) and was a captain in the medical corps during the World War.

—Word has been received by state director of health that the American Child Health Association will conduct surveys, during the present year, in Cicero, Decatur, East St. Louis, Springfield and Rockford. The object of the surveys is to secure data which will show what measures are being applied in child health service and which of these offer the most promising field for the association. The surveys in Illinois are a part of a general program reaching into thirty-one states.

—Dr. Isaac D. Rawlings, state director of public health, announces that a considerable volume of mail, relating in one way or another to the operation of the medical practice act, reaches his office weekly. He calls attention to the fact that all matters of licensure of physicians, midwives, nurses and all other professions or callings for which state licenses are required, are handled by the state department of registration and education. Legal or other procedures relative to these matters come under the jurisdiction of the department of registration and education.

—Six Chicago physicians have been barred from practicing in Connecticut according to reports. They are among the 129 whose licenses were revoked on charges of "fraud and deceit" by the special grand jury investigating the diploma mill scandal. Chicagoans named in the proceedings, according to reports, were Harry J. Schireson, Sigurd Jergens, Nicholas A. Perri, Max Feldman, Monte Val Robinson and Edward A. Kesten. The first two hold diplomas from the Kansas City College of Medicine and Surgery, the others from the St. Louis College of Physicians and Surgeons. Schireson, according to reports, was sentenced in New York for six months for violating the medical statutes and for ten months in Pennsylvania for conspiracy to defraud. He was also indicted in Utica, N. Y., for grand larceny and escaped.

—The Adams County Medical Society Bulletin made its appearance in the field of medical publications, last month, and is one of the best bulletins that comes to the JOURNAL. Under the editorial supervision of Dr. Harold Swanberg, secretary of that society, the first issue is a distinct credit to the editor and the society. Its motto, "To help develop and foster the interests of the medical profession and to fight the steady inroads of the state in the practice of medicine" will find a sympathetic response far beyond the confines of Adams County.

—An examination for the position of Junior Physician — Tuberculosis, Oak Forest Institutions, will be held by the Cook County Civil Service, March 18, at 2 p. m. Local residence is waived.

—The Henry Enos Tuley Memorial Fund.—Friends of the late Dr. Henry Enos Tuley, dean of the School of Medicine of the University of Louisville, are endeavoring to raise by voluntary subscription a memorial fund of at least $1,000, to be held in trust by the university trustees, the income from the fund to be awarded annually at commencement to that undergraduate who submits the best essay on "The Ideals of a Doctor." Friends of Dr. Tuley, alumni of the University of Louisville, and every one who has admired the life work of Dr. Tuley, are invited to send their checks made payable to the Henry Enos Tuley Fund, 101 West Chestnut street, Louisville, Ky. Acknowledgment of all subscriptions will be made in the alumni bulletin of the school.

Deaths

LEE DAVIS APPLEWHITE, East St. Louis, Ill.; St. Louis (Mo.) College of Physicians and Surgeons, 1898; member of the Illinois State Medical Society aged 50; died January 15, of heart disease, while attending a patient.

HENRY MARTIN BOLDT, Ellisgrove, Ill.; Missouri Medical College, St. Louis, 1879; member of the Illinois State Medical Society; aged 72; died, January 19.

WILLIAM O'REILLY BRADLEY, Galesburg, Ill.; University of Buffalo (N. Y.) Department of Medicine, 1883; a Fellow A. M. A.; formerly president of the Knox County Medical Society, and mayor of Galesburg; on the staff of the Galesburg Hospital; aged 62 died suddenly January 30, of edema of the lungs.

BERT EMORY FAHRNEY, La Salle, Ill.; Chicago Homeopathic Medical College, 1897; a Fellow A. M. A.; aged 50; a member of the Illinois State Medical Society; formerly assistant health officer of LaSalle, Oglesby and Peru; active in fraternal and Red Cross work; was found dead in bed, February 1, of heart disease.

JOHN CHRISTOPHER FOLEY, Waukegan, Ill.; Rush Medical College, Chicago, 1890; a Fellow A. M. A.; for twelve years health commissioner of Waukegan; aged 60; died, January 22, at Miami Beach, Fla., following a long illness.

GEORGE HENRY HANSEN, Chicago; Rush Medical College, Chicago, 1896; a Fellow A. M. A.; specialized in otology, laryngology and rhinology; aged 60; died, February 11, at Beloit, Wis., of pneumonia.

CHARLES NORMAN HAZELTON, Morrison, Ill.; Hahnemann Medical College and Hospital, Chicago, 1875; aged 76; died, January 30, of heart disease.

ERNEST SAURENHAUS, Chicago; University of Heidelberg, Germany, 1887; a Fellow A. M. A.; at one time professor of obstetrics at the Bennett Medical College, Chicago, and the University of Illinois College of Medicine, Chicago, and professor of gynecology at the Chicago College of Medicine and Surgery; formerly on the staffs of the Grant, St. Elizabeth's, St. Mary's, St. Anthony's and Mary Thompson hospitals; aged 64; died suddenly, February 1, of heart disease.

HENRY G. SCHUESSLER, Joliet, Ill.; College of Physicians and Surgeons, Chicago, 1898; aged 50; died, November 24, 1923.

GILMAN G. SHAW, Bradford, Ill.; Eclectic Medical College of Pennsylvania, Philadelphia, 1866; aged 82; died, January 24, of senility.

CHARLES SEIMER SKAGGS, Harrisburg, Ill.; St. Louis (Mo.) University School of Medicine, 1907; member of the Illinois State Medical Society; formerly member of the state board of health; aged 39; died, December 29, 1923, of pneumonia following injuries received in an automobile accident.

DR. ANDREW E. MILLER, Metropolis, Ill.; Ohio Medical College, 1896; formerly Chief Anesthesist of Walbright Hospital, Metropolis; aged 52 years; died at his home in Metropolis, of myocarditis after an illness of several months.